

U.S. ENVIRONMENTAL PROTECTION AGENCY COLLECTION OF 1997 IRON AND STEEL INDUSTRY DATA



Return to:

U.S. ENVIRONMENTAL PROTECTION AGENCY
COLLECTION OF 1997 IRON AND STEEL INDUSTRY DATA
c/o Eastern Research Group, Inc.
14555 Avion Parkway, Suite 200
Chantilly, VA 20151-1102

EPA Iron and Steel Survey Help Lines:

Information about Part A: Technical Information

Eastern Research Group, Inc. (800) 357-7075
Internet Electronic Mailing Address steel_helpline@erg.com

Information about Part B: Financial and Economic Information

Eastern Research Group, Inc. (888) 308-9455
Internet Electronic Mailing Address steel_partb@erg.com



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U.S. ENVIRONMENTAL PROTECTION AGENCY COLLECTION OF 1997 IRON AND STEEL INDUSTRY DATA PART A: TECHNICAL INFORMATION



Form Approved
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The public reporting and recordkeeping burden for this survey (Parts A and B) is estimated to average 250 hours. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Office of Policy, Planning, and Evaluation, U.S. Environmental Protection Agency, Regulatory Information Division, MC 2137, 401 M St., S.W., Washington, DC 20460. Include the OMB control number in any correspondence. Do not send the completed survey to this address.



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PART A: TECHNICAL INFORMATION

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INTRODUCTION

The U.S. Environmental Protection Agency (EPA) is conducting a survey of the Iron and Steel Industry as part of its effort to review and revise, as appropriate, effluent limitations guidelines and standards for this industry. This survey requests data on sites engaged in iron or steel manufacturing, forming, and finishing. Sites engaged in coke manufacturing are also included. The technical data collected in Part A of this survey will be used to determine the production rates of industry, use of water for processes, rates of wastewater generation, and the practices of wastewater management, treatment, and disposal. The financial and economic data collected in Part B of this survey will be used to characterize the economic status of the industry and to estimate the possible economic impacts of wastewater regulations.

COMPLETION OF THE SURVEY

The survey is divided into two parts: Part A: Technical Information, and Part B: Financial and Economic Information. Each part has its own general instructions and certification statement. The parts are divided into the following sections:

PART A: TECHNICAL INFORMATION

SECTION 1:	GENERAL SITE INFORMATION
SECTION 2:	MANUFACTURING PROCESS INFORMATION
SECTION 3:	IN-PROCESS AND END-OF-PIPE WASTEWATER TREATMENT AND POLLUTION PREVENTION INFORMATION
SECTION 4:	WASTEWATER OUTFALL INFORMATION

PART B: FINANCIAL AND ECONOMIC INFORMATION

SECTION 1:	SITE IDENTIFICATION
SECTION 2:	SITE FINANCIAL INFORMATION
SECTION 3:	BUSINESS ENTITY FINANCIAL INFORMATION
SECTION 4:	CORPORATE PARENT FINANCIAL INFORMATION

Each section should be completed by the person(s) most knowledgeable about the information requested. All sites must have the corporate official or designee responsible for directing or supervising Part A: Technical Information of the survey response sign the Certification Statement (located on page iii) to verify and validate the information provided, or to certify that this site does not engage in iron or steel manufacturing, forming, or finishing, or coke manufacturing.

EPA has prepared this survey to be applicable to a variety of processes and operations; therefore, not all of the questions will apply to each site. Complete each applicable item in the survey. You are not required to perform nonroutine tests or measurements solely for the purpose of responding to this survey. In the event that exact data are not available, provide best engineering estimates and note the methods that were used to make the estimates on the Comments page located at the end of each section. General instructions are provided on page v, and additional instructions are provided as needed with each question. A complete set of definitions for Part A can be found in the Definitions Section, starting on page vi.

If you would like to request a WordPerfect 6.1 version of the survey instrument, you must do so **in writing** within 30 days of receipt of this survey (see address under **WHERE TO RETURN THE SURVEY** on page iii). You are responsible for submitting a properly formatted hard copy of the survey by the due date which matches this survey's format. The electronic formatting of this survey is complex and may require more experienced clerical support. **Improperly formatted survey responses will be returned to the respondent!**

EPA IRON AND STEEL SURVEY HELP LINES

Information About Part A: Technical Information

Eastern Research Group, Inc. (800) 357-7075
Internet Electronic Mailing Address steel_helpline@erg.com

Information About Part B: Financial and Economic Information

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AUTHORITY

This survey is conducted under authority of Section 308 of the Clean Water Act (Federal Water Pollution Control Act, 33 U.S.C. Section 1318). **All sites that receive this survey must respond to it.** Return all portions of the survey to the EPA **within 180 days** of receiving it. Late filing or failure to comply with these instructions may result in criminal fines, civil penalties, and other sanctions, as provided by law.

If you wish to request an extension for your site or discuss a delivery schedule for a company with multiple sites, you must do so **in writing** within 30 days of receipt of this survey. Send written requests to:

Mr. George Jett
U.S. Environmental Protection Agency (4303)
401 M Street, SW
Washington, DC 20460

Extension requests will be evaluated on a case-by-case basis. Submittal of an extension request to EPA does **not** alter the due date of your survey.

Some sites will also receive a Production, Analytical Data, and/or Wastewater Treatment Capital Cost Follow-Up Survey. Each of these surveys will be sent to approximately 100 sites. These sites will be chosen based on responses to this survey. Your site may receive one or all of these follow-up surveys. EPA estimates the average burden for each of these surveys at about 10 hours. Responses to the follow-up surveys will be due **within 45 days** of receipt.

PROVISIONS REGARDING DATA CONFIDENTIALITY

Regulations governing the confidentiality of business information are contained in the Code of Federal Regulations (CFR) at Title 40 Part 2, Subpart B. You may assert a business confidentiality claim covering part or all of the information you submit, other than effluent data, as described in 40 CFR 2.203(b):

"(b) *Method and time of asserting business confidentiality claim.* A business which is submitting information to EPA may assert a business confidentiality claim covering the information by placing on (or attaching to) the information, at the time it is submitted to EPA, a cover sheet, stamped or typed legend, or other suitable form of notice complying language such as 'trade secret,' 'proprietary,' or 'company confidential.' Allegedly confidential portions of otherwise nonconfidential documents should be clearly identified by the business, and may be submitted separately to facilitate identification and handling by EPA. If the business desires confidential treatment only until a certain date or until the occurrence of a certain event, the notice should so state."

If no business confidentiality claim accompanies the information when it is received by EPA, EPA may make the information available to the public without further notice.

You may claim as confidential all information included in the response to a question by checking the Confidential Business Information (CBI) box next to each question number for which responses contain CBI. Alternatively, all questions in this survey marked with a CBI check box may be claimed confidential now by checking the box at the end of this paragraph. If you do not check this box, any individual response where "CBI" is **NOT** checked will be considered nonconfidential. Note that you may be required to justify any claim of confidentiality at a later time. Note also that plant effluent data are not eligible for confidential treatment, pursuant to Section 308(b) of the Clean Water Act, and thus will be treated as nonconfidential even if the "all CBI" box is checked. **All Eligible Data are CBI G**

Information covered by a claim of confidentiality will be disclosed by EPA only to the extent of, and by means of, the procedures set forth in 40 CFR Part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the Clean Water Act.

Information covered by a claim of confidentiality will be made available to EPA contractors under EPA Contract Numbers 68-C6-0044, 68-C6-0022, and 68-C4-0046 to enable the contractors to perform the work required by their contracts with EPA. All EPA contracts provide that contractor employees use the information only for the purpose of performing the work required by their contracts and will not disclose any CBI to anyone other than EPA without prior written approval from each affected business or from EPA's legal office. Any comments you may wish to make on this issue must be submitted in writing along with your completed survey.

WHERE TO RETURN THE SURVEY

After completing the survey and certifying the information that it contains, use the enclosed mailing label to mail the completed survey to:

U.S. Environmental Protection Agency
Collection of 1997 Iron and Steel Industry Data
c/o Eastern Research Group, Inc.
14555 Avion Parkway, Suite 200
Chantilly, VA 20151-1102

Retain a copy of the completed survey, including attachments. EPA will review the information submitted and may request your cooperation in answering follow-up questions, if necessary, to complete analyses.

CERTIFICATION STATEMENT FOR PART A

Is your site engaged in iron or steel manufacturing, forming, or finishing, or coke manufacturing?

- G** Yes (Complete Part A: Technical Information of the survey; sign Certification #1 below when Part A has been completed)
- G** No (Sign Certification #2 below and return the following to EPA at the given address: pages iii and iv and the cover page of Part A containing the site address label)

When Part A of the survey has been completed or "No" has been checked above, the individual responsible for directing or supervising the preparation of this part must read and sign the appropriate Certification Statement listed below. The certifying official must be a responsible corporate official or his/her authorized representative.

Certification Statement #1

I certify under penalty of law that Part A: Technical Information of the enclosed survey response was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, accurate and complete. In those cases where we did not possess the requested information, we provided best engineering estimates in response to the questions. We have to the best of our ability indicated what we believe to be company confidential business information as defined under 40 CFR Part 2, Subpart B. We understand that we may be required at a later time to justify our claim in detail with respect to each item claimed confidential. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment as explained in Section 308 of the Clean Water Act.

Signature of Certifying Official

Date

Printed Name of Certifying Official

()
Telephone Number

Title of Certifying Official

Certification Statement #2

I certify under penalty of law that this site does not engage in iron or steel manufacturing, forming, or finishing, or coke manufacturing. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment as explained in Section 308 of the Clean Water Act.

If you are certifying that your site is not engaged in iron or steel forming or finishing, indicate the classification of your site.

- ☐ Warehouse
☐ Office
☐ Distribution
☐ Other (specify): _____

Signature of Certifying Official

Date

Printed Name of Certifying Official

()
Telephone Number

Title of Certifying Official

GENERAL INSTRUCTIONS

Complete this survey for your entire site. A site is one contiguous physical location at which manufacturing operations related to the iron and steel industry occur. These operations include, but are not limited to, cokemaking, ironmaking, steelmaking, rolling, and finishing. In some instances, a site may include properties located within separate fence lines, but located close to each other.

Mark responses for each question. Fill in the appropriate response(s) to each question. Use **black ink** or **type** in the spaces provided. If the space allowed for the answer to any question is inadequate for your complete response, continue the response in the Comments area at the end of each section of the survey, cross-referencing the appropriate question number. If additional attachments are required to clarify a response, place the associated question number and your site ID number (shown on the cover page of Part A) in the upper right corner of each page of the attachments. The following is a list of items which may be included as attachments to this survey:

- Site brochure, pamphlet, general description, or product list
- Site map or diagram
- Process flow diagrams
- Hard copy summaries of analytical data collected from permit monitoring locations
- Electronic copy summaries of analytical data collected from permit monitoring locations
- Pollution prevention or management practices

Answer all questions unless instructed otherwise. The purpose of this survey is to gather all available information pertinent to coke, iron, and steel operations. Answer the questions in sequence unless you are directed to SKIP. Report only whole numbers, unless instructed otherwise. If a question is not applicable to your facility, write "NA". As noted throughout the survey, you are required to provide best engineering estimates when data are not readily available. If you provide an estimate, note the methods that were used to make the estimates on the Comments page at the end of each section. EPA does not intend for sites to conduct detailed studies to obtain the data. If you feel you need to conduct a detailed study, please call the Technical Information Help Line at (800) 357-7075 or email your questions to steel_helpline@erg.com.

Attach process flow diagrams (PFDs) to the survey. In order to understand your site's overall process, EPA is requiring that you include PFDs. Write the site ID number (shown on the cover page of Part A) on each diagram, and number each PFD in the upper right corner, starting with "PFD-1", numbering each sequentially. More than one manufacturing process, wastewater treatment operation, and/or wastewater discharge location may be shown on the same PFD. Questions requesting diagrams of operations or discharge locations will also request the PFD number. If the operation or discharge location has already appeared in a previously provided diagram, then only the PFD number is required. In each section where PFDs are requested, a checklist of information and a sample diagram are provided. Use these items to ensure that your diagrams are complete. If a PFD should be treated as confidential, stamp it "Confidential" or write "Confidential" or "CBI" across the top. If any diagram is not marked "Confidential", it will be considered nonconfidential under EPA's confidentiality procedures set forth in 40 CFR Part 2, Subpart B.

Some PAGES in the survey will likely need to be photocopied before you respond. Indicate how many copies of the page you are submitting by completing the entry "Copy ____ of ____" in the top right corner.

Some SECTIONS in the survey will likely need to be photocopied before you respond. Indicate how many copies of the section you are submitting by completing the entry "Section Copy ____ of ____" at the top of each page.

Pay close attention to the measurement units requested (e.g., gallons, tons) in each question. Be careful to provide data in the requested units. Note that, in all cases, "tons" refers to "short tons" (2,000 pounds).

Retain a copy of the completed survey for your records. EPA will review the information submitted and may request, if necessary, your cooperation in answering follow-up clarification questions to complete the data collection effort. Retain a copy of the completed survey, including attachments, in case you (i.e., the contact identified in Question 1-3) are contacted to clarify your responses. Also, please maintain a record of sources used to complete the questions.

DEFINITIONS

Acid Cleaning. Treatment of steel surfaces with relatively mild acid solutions for purposes of removing surface dirt and light oxide coatings. Scale and/or heavy oxide removal is considered acid pickling (see below). Acid cleaning operations are typically conducted for surface preparation prior to application of hot dip or electrolytic metal coating and after cold forming and annealing operations.

Acid Pickling. Scale and/or oxide removal from steel surfaces using relatively strong acid solutions. Acid pickling operations are typically conducted after hot forming operations and prior to subsequent steel finishing operations (e.g., cold forming, annealing, alkaline cleaning, metal coatings).

Acid Regeneration. Treatment of spent acid solutions by thermal and/or chemical means to produce usable acid solutions and iron-rich by-products.

Agglomeration. The process of binding materials. See definitions for briquetting, nodulizing, pelletizing, and sintering.

Alkaline Cleaning. Application of solutions containing caustic soda, soda ash, alkaline silicates, or alkaline phosphates to a metal surface primarily for removing mineral deposits, animal fats, and oils.

Alloy. A substance that has metallic properties and is composed of two or more chemical elements of which at least one is a metal.

Alloy Steel. Steel is classified as alloy when the maximum of the range given for the content of alloying elements exceeds one or more of the following: manganese, 1.65%; silicon, 0.60%; copper, 0.60%; or in which a definite range or a definite minimum quantity of any of the following elements is specified or required within the limits of the recognized field of constructional alloy steels: aluminum, boron, chromium (less than 10%), cobalt, lead, molybdenum, nickel, niobium (columbium), titanium, tungsten, vanadium, zirconium, or any other alloying element added to obtain a desired alloying effect.

Alternate Effluent Limitations to Those Representing the Degree of Effluent Reduction Attainable by the Application of Best Practicable Control Technology Currently Available, Best Available Technology, and Best Conventional Technology, 40 CFR 420.03. Section 420.03 (commonly known as the "water bubble" rule) provides a regulatory flexibility mechanism whereby a discharger with multiple outfalls or NPDES permit compliance points may discharge greater quantities of pollutants from outfalls where treatment costs may be high in exchange for a larger decrease in discharges from outfalls at the same plant where treatment costs may be less. The regulation stipulates that only intraplant trades and no interplant trades are allowed; that only like pollutants can be traded (e.g., zinc for zinc, not zinc for lead or ammonia-N); that minimum net reductions of 10% for toxic and non-conventional pollutants and 15% for conventional pollutants must be achieved; and, that trades within certain subcategories (i.e., cokemaking and cold forming) are restricted.

Ammonia Liquor (or Flushing Liquor). An aqueous solution used to condense moisture and tars from coke oven gas derived from coals charged to a by-product recovery coke oven battery. Excess ammonia liquor, or waste ammonia liquor, is flushing liquor rejected from the flushing liquor recirculating loop through the coke oven gas collecting mains and the coal tar decanter, and generally comprises the free and bound moisture contained in the coal charge to the by-product coke ovens. Weak ammonia liquor is ammonia liquor that has been processed in a free or fixed ammonia distillation column (ammonia still) for ammonia recovery to the coke oven gas stream prior to recovery of ammonium sulfate, anhydrous ammonia, or other by-product ammonium compounds.

Ammonia Still. A steam-stripping column in which ammonia and acid gases (hydrogen cyanide, hydrogen sulfide) are removed from waste ammonia liquor and other ammonia-containing wastewaters. A "free" still operates with steam only, with no alkali addition, to remove ammonia and acid gases. A "fixed" still is similar to a "free" still except lime, or more commonly sodium hydroxide, is added to the liquor to liberate ammonia from its compounds so it can be steam stripped.

Annealing. A heat treatment process in which steel is exposed to an elevated temperature in a controlled atmosphere for an extended period of time and then cooled. Annealing is performed to relieve stresses; increase softness, ductility, and toughness; and/or to produce a specific microstructure in the steel.

Argon Bubbling. Injection of argon into molten metal for rapid and uniform mixing of alloys, temperature homogenization, adjustment of chemical composition, and partial removal of non-metallic inclusions. Argon bubbling methods include argon stirring, trimming, and rinsing.

Argon/Oxygen Decarburization (AOD). A process by which an electric arc furnace heat is decarburized by blowing argon and oxygen into the steel at varying ratios.

Baghouse. A dry air pollution control device comprising an enclosure containing multiple fabric filter elements (bags) for removal of particulate matter from gas streams.

Bar. Produced from ingots, blooms, or billets covering the following range: Rounds, 3/8 to 8-1/4 inches inclusive; Squares, 3/8 to 5-1/2 inches; Round-cornered squares, 3/8 to 8 inches inclusive; Hexagons, 1/4 to 4-1/16 inches inclusive; Flats, 13/64 inches and over in specified thicknesses and not over 6 inches specified width.

Basic Oxygen Furnace (BOF). Pear-shaped, refractory-lined vessel used for conversion of a charge of molten iron and steel scrap into molten steel by the injection of high pressure oxygen into the furnace bath.

Basic Oxygen Furnace (BOF) Shop. A building or structure containing one or more basic oxygen furnaces and ancillary processes and equipment (e.g., hot metal desulfurization; hot metal charging; scrap charging; oxygen and flux additions; furnace tapping; ladle preparation; deslagging and slag handling; and primary and secondary air emission control equipment).

Battery. See By-Product Coke Battery.

Beam. A member of the structural steel family. Beams come in three varieties: the standard H, I, and the wide flange used for weight supporting purposes.

Benzene NESHAPs Control. The National Emission Standards for Hazardous Air Pollutants (NESHAPs) regulations set out at 40 CFR 61, Subpart J (6/6/89), Subpart L (9/14/89), Subpart BB (3/7/90), and Subpart FF (3/7/90).

Billet. A semi-finished piece of steel formed by casting or from hot rolling an ingot or a bloom. It may be square, but is never more than twice as wide as thick. Its cross-sectional area is usually not more than 36 square inches.

Blast Furnace. A large conical-shaped furnace used to reduce and melt iron-bearing materials to molten iron as the primary product. By-products include combustible blast furnace gas and blast furnace slag.

Blast Furnace Charge. The raw materials added to the blast furnace which react when heated to produce molten iron. The principal raw materials charged to blast furnaces include coke, limestone, beneficiated iron ores, and sinter.

Blast Furnace Gas Seals. Water-flooded seals located on a blast furnace gas main for collection and removal of blast furnace gas condensate from the blast furnace gas main. Blast furnace gas seal water is contaminated with pollutants associated with blast furnace operations (e.g., ammonia-N, cyanide, phenolic compounds).

Bloom. A semi-finished piece of steel formed by casting or from hot rolling or forging of an ingot. A bloom is square or not more than twice as wide as thick. Its cross-sectional area is usually not less than 36 square inches.

Blowdown. The partial discharge of water from a recirculating process or cooling water system for purposes of correcting hydraulic imbalances in the recirculating system or to control concentrations of substances in the recirculating water.

Briquetting. A process for agglomerating or forming materials into discrete shapes of sufficient size, strength, and weight for charging to a subsequent process (e.g., briquetting wastewater sludges for charging to a blast furnace).

Building Evacuation. Control of process and fugitive air emissions from an entire building (e.g., total building evacuation for an electric furnace shop).

Butt-Welded Pipe/Tube. A continuous strip of hot-rolled skelp which is heated, formed into a circular shape, and then welded to form the pipe or tube.

By-Product Coke Battery. A coke-producing unit comprised of numerous adjoining, refractory-lined, slot-type ovens; coal charging and coke pushing facilities; coke quench stations; and coke oven gas collecting mains.

By-Product Cokemaking. Process in which coal is distilled at high temperatures in the absence of air to produce coke and recover the volatile compounds as by-products (e.g., crude coal tar, crude light oil).

Carbon Steel. Steel which owes its properties chiefly to various percentages of carbon without substantial amounts of other alloying elements. Steel is classified as carbon steel when no minimum content of elements other than carbon is specified or required to obtain a desired alloying effect and when the maximum content for any of the following do not exceed the percentage noted: manganese, 1.65%; silicon, 0.60%; copper, 0.60 percent.

Casting. (1) A term applied to the act of pouring molten metal into a mold. (2) The metal object produced by such pouring.

Categorical Pretreatment Standards. Standards for discharges of pollutants to POTWs promulgated by EPA, in accordance with Section 307 of the Clean Water Act, that apply to specific process wastewater discharges from particular industrial categories (40 CFR 403.6 and 40 CFR 405 - 471).

Clarifier. A wastewater treatment unit, usually in the form of a circular, cone-bottom steel or concrete tank with a center stilling well and mechanical equipment at the bottom for settling and subsequent removal of suspended solids from the wastewater stream. Clarifiers may also be equipped with surface skimming devices for removal of floating materials and oil.

Classifier. Mechanical device used for removal of heavy or coarse particulate matter from a wastewater stream.

Coke. The carbon product resulting from the high temperature distillation of metallurgical coals in by-product or non-recovery coke ovens.

Coke Breeze. Undersized coke particles (also referred to as coke fines) recovered from coke screening operations and coke quenching stations. Coke breeze may be used as fuel in sintering operations or may be sold as a by-product.

Cold Forming. Also known as cold working; a forming operation in which the shape of the metal piece is changed by plastic deformation at a temperature below that at which recrystallization occurs. The plastic deformation can be effected by forging, rolling, extrusion, or drawing.

Continuous Casting. The process of casting liquid steel directly into semi-finished shapes such as slabs, billets, and rounds, thus eliminating ingot casting and associated ingot stripping, reheating, and primary rolling operations.

Contract Haul. Collection of wastewater or sludge by a private disposal service, scavenger, or purveyor in containers for subsequent transportation, treatment, and disposal off site.

Deep-Well Injection. Long-term or permanent disposal of untreated, partially treated, or treated wastewaters by pumping the wastewater into underground formations of suitable character through a bored, drilled, or driven well.

Dekishing. Removal of carbon graphite (kish) from the surface of molten steel in the ladle.

Dephenolizer. A coke plant by-product recovery unit in which phenol is removed from ammonia liquor and is recovered as sodium phenolate by liquid extraction and vapor recirculation.

Descaling. The process of removing scale from the surface of steel. The most common method of descaling is to crack the scale by use of roughened rolls and a forceful water spray (see also salt bath descaling).

Desulfurization. Processes for removal of sulfur compounds from coke oven gases and molten iron. Coke oven gas desulfurization usually involves scrubbing the sulfur-rich gas stream with an absorbent solution, with subsequent recovery of elemental sulfur from the solution. Hot metal (molten iron) desulfurization involves treatment of the molten metal with lime, with subsequent collection of sulfur-rich particulate matter in fabric filter emission control devices (baghouses).

Dioxin/furans. Chlorinated dibenzo-*p*-dioxins (CDDs) and chlorinated dibenzofurans (CDFs) are closely related families of highly toxic and persistent organic chemicals formed as unwanted by-products in some commercially significant chemical reactions, during high temperature decomposition and combustion of certain chlorinated organic chemicals, during combustion of natural materials, and through other reactions involving chlorine and organic materials. There are 210 CDD/CDF compounds (or congeners) with four to eight chlorine substitutions. Seventeen (CDD/CDF) congeners chlorinated at the 2,3,7,&8 lateral positions are among the most biologically active and toxic CDDs/CDFs. 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (2,3,7,8-TCDD) is the most toxic of the CDDs/CDFs. The relative toxicity of mixtures of CDDs/CDFs is described through use of International Toxicity Equivalence Factors (I-TEFs/89).

Direct-Reduced Iron (DRI). Relatively pure iron produced by the reduction of iron ore below the melting point of the iron produced. DRI is used as a substitute for scrap steel in electric arc furnace steelmaking to minimize contaminant levels in the melted steel and to allow economic steel production when market prices for scrap are high.

Dortmund-Horder-Huttenunion Process (D-H). A vacuum method of recirculation degassing which comprises a refractory-lined vacuum vessel with a "snorkel" tube, an electric-resistance graphite heating rod, an alloy addition hopper, a mechanism for raising and lowering the vacuum vessel or the ladle, and a multi-stage steam-ejector system.

Drawing. A forming operation whereby deformation of the metal is accomplished by pulling the material through a die by means of a tensile force applied on the exit side.

Dry Air Pollution Control Equipment. Control equipment in which gases are cleaned without the use of water.

DSCFM. Dry standard cubic feet per minute. A standard unit for measuring gas flow.

Effluent Limitations Guidelines and Standards. Regulations promulgated by U.S. EPA under authority of Sections 301, 304, 306 and 307 of the Clean Water Act that set out minimum, national technology-based standards of performance for point source wastewater discharges from specific industrial categories (e.g., iron and steel manufacturing plants). Effluent limitations guidelines and standards regulations are implemented through the NPDES permit and national pretreatment programs and include the following:

- Best Practicable Control Technology Currently Available (BPT)
- Best Available Technology Economically Achievable (BAT)
- Best Conventional Pollutant Control Technology (BCT)
- New Source Performance Standards (NSPS)
- Pretreatment Standards for Existing Sources (PSES)
- Pretreatment Standards for New Sources (PSNS)

The pretreatment standards (PSES, PSNS) are applicable to industrial facilities with process wastewater discharges to publicly owned treatment works (POTWs). The effluent limitations guidelines and new source performance standards (BPT, BAT, BCT and NSPS) are applicable to industrial facilities with direct discharges of process wastewaters to waters of the United States.

Electric Arc Furnace (EAF). A furnace in which steel scrap and other ferrous and nonferrous materials are melted through application of electrical and chemical energy and converted into liquid steel.

Electric Arc Furnace (EAF) Shop. A building or structure containing one or more electric arc furnaces and ancillary processes and equipment (e.g., scrap and/or DRI charging; lime, carbon, alloy, and oxygen addition; furnace tapping; deslagging and slag handling; and primary and secondary air emission control equipment).

Electric-Resistance-Welded Pipe/Tube. Pipe or tube formed from a plate or continuous strip of steel which is formed into a circular shape and welded together by the application of pressure and electrical energy. Heat is generated by the resistance to current flow (either transformed or induced) across the seam during welding.

Electroslag Remelting (ESR). A specialty steel refining process used to produce ingots with stringent composition requirements. In the process, one or more steel electrodes of about the desired chemical composition are drip-melted through molten slag into a water-cooled copper mold at atmospheric pressure.

Electrostatic Precipitator (ESP). An air pollution control device that imparts an electrical charge on solid particles in the gas stream which are then attracted to an oppositely charged collector plate. The collector plates are intermittently rapped to discharge the collected dust to a hopper below.

Extrusion. A forming operation whereby a material is forced, by compression, through a die orifice.

Filtration. The passage of fluid through a porous medium to remove matter held in suspension.

Final Cooler. A packed tower used for cooling coke oven gas by direct contact with water. The gas is generally cooled to approximately 30°C (86°F) for recovery of light oil.

Finishing. Term used to generically describe steel processing operations conducted after hot forming (e.g., acid pickling, scale removal, cold forming, annealing, alkaline cleaning, hot coating, and electroplating).

Flume Flushing. Process by which mill scale collected under hot forming mills and runout tables of continuous casters is transported with water to scale pits for subsequent recovery.

Fluorspar. A flux material used in the basic oxygen steelmaking process which typically contains 50% to 75% calcium fluoride.

Flushing Liquor. (See ammonia liquor)

Flux. Material added to a blast furnace or steelmaking furnace for the purpose of removing impurities from the molten metal.

Forging. A forming operation in which a metal piece is shaped by hammering.

Forming. Operations in which the shape of a metal piece is changed by plastic deformation. Examples include forging, rolling, extrusion, and drawing.

Fourth Hole. A refractory-lined hole in the roof of an electric arc furnace which serves as an exhaust port for furnace gases.

Free Leg. That section of an ammonia still from which ammonia, hydrogen sulfide, carbon dioxide, and hydrogen cyanide are steam distilled and returned to the gas stream without the addition of an alkaline substance to release free ammonia.

Fundamentally Different Factors Variance, CWA Section 301(n). The Administrator, with the concurrence of the State, may establish an alternative requirement under Section 301(b)(2) or Section 307(b) of the Clean Water Act for a facility that modifies the requirements of national effluent limitation guidelines or categorical pretreatment standards that would otherwise be applicable to such facility, if the owner or operator of such facility demonstrates to the satisfaction of the Administrator that the facility is fundamentally different with respect to the factors (other than cost) specified in Section 304(b) or 304(g) and considered by the Administrator in establishing such national effluent limitation guidelines or categorical pretreatment standards.

Galvanizing. Application of zinc to the surface of steel primarily for the purpose of corrosion protection. Zinc may be applied by passing precleaned steel through a molten zinc bath (hot dip galvanizing) or electrochemically (electrogalvanizing).

Grate-Kiln System. A system for producing pellets consisting of a straight grate for drying and preheating the pellets, a rotary kiln for heating to the final temperature, and a horizontal rotary hearth for cooling and heat recuperation.

Ground Water. Water in a saturated zone or stratum beneath the surface of land or water.

Heat. Quantity of steel manufactured per batch in a BOF or an EAF.

Hot Coating. Operations including immersion of precleaned steel into baths of molten metal. Common metal types include: tin, zinc (galvanizing), combinations of lead and tin (terne coating), and combinations of aluminum and zinc (galvalume® coating). Hot coating is typically used to improve resistance to corrosion, and for some products, to improve appearance and paintability.

Hot Forming. Also known as hot working; a forming operation in which the shape of the metal piece is changed by plastic deformation at a temperature above that at which recrystallization occurs. The plastic deformation can be effected by forging, rolling, extrusion, or drawing.

Incineration. A controlled combustion process most commonly used for destruction of solid, liquid, or gaseous wastes.

Inclusion Morphology. In secondary steelmaking, changing the composition and/or shape of undesirable matter remaining in the steel to make the remaining matter as innocuous to the desired properties of the finished steel as possible.

Induction Stirring. A process in vacuum ladle degassing in which induction coils are used to induce eddy currents in the molten steel to produce a stirring effect.

Ingot. A large block-shaped steel casting. Ingots are intermediates from which other steel products are made. When continuous casters are not used, an ingot is usually the first solid form the steel takes after it is made in a furnace.

Iron Ore. The raw material from which iron is made. It is primarily iron oxide with impurities such as silica.

Ladle. A large vessel into which molten metal or molten slag is received and handled.

Ladle Metallurgy. A secondary step in the steelmaking process usually performed in a ladle after the initial refining process in a steelmaking furnace (i.e., BOF, EAF) is complete. Ladle metallurgy is conducted for one or more of the following purposes: to control gases in the steel; to remove, add, or adjust concentrations of metallic or non-metallic compounds (alloying); and to adjust physical properties (e.g., temperature).

Ladle-To-Ladle Degassing. A method of stream degassing in which a heat of steel is transferred from a tap ladle into a teeming ladle located inside an evacuated tank. Ladle-to-ladle degassing can be used for removing hydrogen and oxygen from steel.

Ladle-To-Mold Degassing. A method of vacuum stream degassing in which a heat of steel is transferred from the steelmaking furnace into a tapping ladle, then into a transfer or "pony" ladle, and then into an ingot mold in an evacuated vacuum tank.

Landfill Leachate. Water or ground water collected from that portion of a solid or hazardous waste landfill containing disposed solid or hazardous wastes.

Larry Car. A movable device located on top of a coke battery for receiving and charging screened coal to coke ovens through charging holes located at the top of the ovens.

Light Oil. An unrefined, clear, yellow-brown oil with an approximate specific gravity of 0.889 produced as a by-product of by-product cokemaking operations. It contains varying amounts of coal-gas products with boiling points ranging from about 40°C to 200°C and from which benzene, toluene, xylene, and solvent naphthas are recovered.

Lime. Calcium oxide (CaO), produced by burning limestone (principally comprised of calcium carbonate (CaCO₃)) in a lime kiln. Lime is used as a flux (slagging agent) in BOF and EAF steelmaking; limestone is used as a flux in blast furnaces for production of molten iron.

Microcleanliness. An end result of secondary steelmaking processes which is characterized by a removal of undesirable non-metallics, primary oxides, and sulfides from the molten steel.

Modifications for Certain Non-conventional Pollutants, CWA Section 301(g). The Administrator, with the concurrence of the State, may modify the requirements of Section 301(b)(2)(A) of the Clean Water Act with respect to the discharge from any point source of ammonia, chlorine, color, iron, and total phenols (4AAP) (when determined by the Administrator to be a pollutant covered by Section 301(b)(2)(F)) and any other pollutant which the Administrator lists under 301(g)(4). In the iron and steel industry, variances under Section 301(g) have been granted for discharges of ammonia-N and phenols (4AAP) from cokemaking and ironmaking operations. The variances granted under Section 301(g) must meet certain conditions (e.g., the alternative discharges from BAT must meet local water quality standards, cannot be less stringent than BPT, must not result in more stringent controls on other dischargers, and must satisfy other environmental and human health concerns).

Modified Vacuum Induction (Therm-I-Vac). A system which can be used either as a stream-degassing unit or for induction-furnace melting of steel under low pressure.

Nodulizing. A process for forming fine iron-bearing materials moving through a rotary kiln into nodules or lumps. The nodules are formed by the rolling of the charge heated to fusion temperatures.

Noncontact Cooling Water. Water used for cooling in process and nonprocess applications which does not come into contact with any raw material, intermediate product, by-product, waste product (including air emissions), or finished product.

Nonrecovery Cokemaking. Production of coke from coal in which volatile components derived from the coal are consumed in the process and by-products are not recovered.

NPDES Program. The National Pollutant Discharge Elimination System (NPDES) program authorized by Sections 307, 318, 402, and 405 of the Clean Water Act which applies to facilities that discharge wastewater directly to United States surface waters.

Oil Skimmer. A device which skims the top surface of wastewater for the purpose of removing floating oil.

Operable Unit. Any on-site unit which is either: (1) currently operating; or (2) idle, but not permanently shut down. Units may be idle for reasons such as market conditions, production outages, maintenance and rebuilding, or labor disputes.

Pelletizing. The processing of dusts from steel furnaces into pellets of adequate size and weight for recycle.

Pig Iron. Iron cast into the form of small blocks that weigh about 30 kilograms (kg) each. The blocks are called pigs.

Pipe. A hollow, cylindrical product distinguished from tube by heavier wall thickness. Pipe is usually measured by its inside diameter. Tube is generally measured by outside diameter.

Plant Service Water. City, well, or surface water which has not been used elsewhere on site (i.e., water prior to its use in a process or operation).

Plate. A flat-rolled finished steel product within the following size and/or weight limitations:

<u>Width</u>	<u>Thickness</u>
over 48 inches wide	0.180 inches or thicker
between 8 and 48 inches inclusive	0.230 inches or thicker
over 48 inches wide	7.53 lb/sq ft or heavier
between 8 and 48 inches inclusive	9.62 lb/sq ft or heavier

Polychlorinated Biphenyl (PCB) Compounds. Any of a family of halogenated aromatic hydrocarbons that were produced and marketed in the United States as a series of complex mixtures under the trade name Aroclor; any specific chemical included within the following Chemical Abstracts Service Registry Numbers: 1336-36-3 (total PCBs), 12674-11-2 (Aroclor 1016), 11104-28-2 (Aroclor 1221), 11141-16-5 (Aroclor 1232), 53469-21-9 (Aroclor 1242), 12672-29-6 (Aroclor 1254), or 11096-82-5 (Aroclor 1260), see 40 CFR 302; or, any of 209 synthetic congeners of biphenyl with 1 to 10 chlorine substitutions.

Potable Water. Water which can be consumed; drinking water.

Privately Owned Treatment Works (PrOTW). Any device or system owned and operated by a private entity and used for storage, treatment, recycling, or reclamation of liquid industrial wastes.

Process Wastewater. Any water which, during manufacturing or processing, comes into direct contact with or results from the storage, production, or use of any raw material, intermediate product, finished product, by-product, or waste product. Wastewater from slag quenching, equipment cleaning, direct-contact air pollution control devices, rinse water, storm water associated with industrial activity, and contaminated cooling water are considered process wastewater. Process wastewater may also include wastewater that is contract hauled for off-site disposal. Sanitary wastewater, uncontaminated noncontact cooling water, and storm water not associated with industrial activity are not considered process wastewater.

Publicly Owned Treatment Works (POTW). Any device or system owned and operated by a public entity and used in the storage, treatment, recycling, or reclamation of liquid municipal sewage and/or liquid industrial wastes. The sewerage system that conveys wastewaters to treatment works is considered part of the POTW.

Quenching. A process of rapid cooling from an elevated temperature by contact with liquids, gases, or solids.

Recirculation Degassing. A vacuum degassing method in which the liquid metal in a ladle is forced by atmospheric pressure into an evacuated degassing chamber where it is exposed to low pressure and then circulated back into the ladle. The metal may recirculate through the chamber 40 to 50 times to achieve the desired levels of degassing. The vacuum environment is used to recirculate the steel as well as to serve as the means by which the degassing is accomplished. Three major types of recirculation degassing are the Dortmund-Horder-Huttenunion Process, the Ruhrstahl-Heraeus Process, and the RH-OB Process.

Reheat Furnace. A gas-fired, refractory-lined furnace used for heating steel shapes for subsequent hot forming operations.

Reversing Mill. A rolling mill in which a piece of steel (e.g., plate, strip, or sheet) alternately passes through work rolls in both directions to achieve the desired thickness reduction.

RH-OB Process. A recirculating vacuum degassing system used primarily for removal of hydrogen and a certain amount of carbon from steel. The process comprises a refractory-lined vacuum vessel with two legs or "snorkel" tubes at the bottom, an alloy addition hopper, a mechanism for raising and lowering the vacuum vessel, and a steam-ejector system. Both an inert gas and oxygen are introduced into the system. The inert gas aids in stirring the metal and the oxygen assists in the decarburization of the liquid steel.

Rod. A hot-rolled steel section, usually round in cross-section, produced as a final product or as an intermediate product for subsequent production of wire and wire products.

Rolling. A forming operation that reduces the thickness of a metal piece by passing it between two or more rolls.

Roughing Stand. The rolls used for breaking down the ingot, billet, or slab in the preliminary rolling of metal products.

Ruhrstahl-Heraeus Process (R-H). A recirculating vacuum degassing process comprising a refractory-lined vacuum vessel with two legs or "snorkel" tubes at the bottom, an alloy addition hopper, a mechanism for raising and lowering the vacuum vessel, a gas inlet pipe on one of the legs, and a steam-ejector system. An inert gas is introduced into the system to facilitate the flow of metal.

Runout Table. Area of a hot strip mill located after the finishing stands and before the coilers where laminar-flow cooling is applied to the strip. Generally, for any hot forming mill, this area of the mill is downstream of the last stand of work rolls. For continuous casters, this area of the process is after the torch cut-off.

Salt Bath Descaling. The aggressive physical and chemical removal of heavy scale from semi-finished specialty and high-alloy steels with molten salt baths or solutions containing neutral or acidic salts.

Scale. Iron oxides which form on the surface of hot steel when the steel is exposed to an oxidizing atmosphere.

Scale Pit. An in-ground rectangular (and in some instances, circular) basin constructed of concrete for recovery of scale from process wastewaters used in hot forming and continuous casting operations. Collected scale is mechanically removed and recovered for recycle through a sinter plant or for sale as a by-product.

Scarfig. Removal of imperfections on the surface of semi-finished steel shapes by the use of oxygen/acetylene torches.

Scrap. Iron or steel discard, cuttings, or junk metal, which can be reprocessed.

Seamless Pipe/Tube. Tubular product produced by piercing (a hot forming process), which is followed by further processing to achieve correct wall and size dimensions, or by extrusion for small diameter products.

Semi-Wet Air Pollution Control Equipment. A gas cleaning system in which furnace off-gases are conditioned with moisture prior to processing in electrostatic precipitators or baghouses.

Sheet. Steel produced in coils or in cut lengths within the following size limitations:

<u>Width</u>	<u>Thickness</u>
between 12 and 48 inches inclusive	0.1800 to 0.2299 inch
over 12 inches	0.0449 to 0.1799 inch

Sintering. The process of burning a fuel (e.g., coke fines, coke breeze) with limestone fines and a variety of fine iron-bearing materials including iron ore screenings, blast furnace gas cleaning wastewater sludges, and mill scale to form an agglomerated product suitable for charging to a blast furnace. The product is a clinker-like aggregate referred to as sinter or clinker.

Site. A site is generally one contiguous physical location at which manufacturing operations related to the iron and steel industry occur. This includes, but is not limited to, cokemaking, ironmaking, steelmaking, rolling, and finishing. In some instances, a site may include properties located within separate fence lines, but located close to each other.

Skelp. Flat, hot-rolled steel strip or sheet used to manufacture welded pipe or tube products.

Slab. A semifinished block of steel formed from a rolled ingot or manufactured on a continuous slab casting machine, with its width at least twice its thickness.

Slag. Vitrified mineral by-product produced in the reduction of metals from their ores. The principal components of blast furnace slag are oxides of silica and alumina originating chiefly with the iron-bearing materials and lime and magnesia originating with the flux. The major components of steelmaking slags are calcium silicates, lime-iron compounds, and lesser amounts of free lime and magnesia. Usually, slags consist of combinations of acid oxides with basic oxides; neutral oxides are added to aid fusibility.

Sludge Dewatering. The mechanical or natural processes for removal of free water from wastewater sludges. Mechanical equipment used for sludge dewatering may include rotary or leaf vacuum filters, filter presses, or belt filters. Wastewater sludges may be dewatered naturally in sludge drying beds.

Specialty Steel. Steel products containing alloying elements which are added to enhance the properties of the steel product when individual alloying elements (e.g., aluminum, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium, zirconium) exceed 3% or the total of all alloying elements exceeds 5 percent.

Stainless Steel. A trade name given to alloy steel that is corrosion and heat resistant. The chief alloying elements are chromium, nickel, and silicon in various combinations with possible small percentages of titanium, vanadium, and other elements. By American Iron and Steel Institute (AISI) definition, a steel is called "stainless" when it contains 10% or more chromium.

Steel. A hard, tough metal composed of iron alloyed with carbon and other elements to enhance hardness and resistance to rusting.

Stream Degassing. A category of vacuum degassing processes including ladle-to-mold degassing, ladle-to-ladle degassing, and tap degassing.

Strand. A continuous casting mold and its associated mechanical equipment. Also, a term applied to the traveling grate of the sintering machine.

Strip. Steel produced in coils or in cut lengths within the following size limitations:

<u>Width</u>	<u>Thickness</u>
up to 3-1/2 inches inclusive	0.0255 to 0.2030 inch inclusive
between 3-1/2 and 6 inches inclusive	0.0344 to 0.2030 inch inclusive
between 6 and 12 inches inclusive	0.0449 to 0.2299 inch inclusive

Surface Water. Waters of the United States as defined at 40 CFR 122.2.

Tandem Mill. A mill with a number of stands in succession, generally a cold rolling mill.

Tap Degassing. A method of stream degassing in which the heat from the steelmaking furnace is tapped into a tundish and then flows into a ladle which has been evacuated using a steam-ejector pumping system.

Tar. Black, viscous organic matter removed from coke oven gas in recirculating flushing liquor systems in the gas collector mains located on top of the by-product recovery coke battery. Tar is subsequently recovered in a tar or flushing liquor decanter where most of the tar is separated from recirculating flushing liquor by gravity separation.

Temper Rolling. Relatively light cold rolling process (< 1% thickness reduction) performed to improve flatness, alter the mechanical properties of the steel, and minimize surface disturbances. Temper mills are usually single-stand mills.

Therm-I-Vac. See Modified Vacuum Induction.

Traveling Grate. Part of a sinter machine or other agglomeration process consisting of zones for drying, preheating, combustion, and cooling.

Tube. A hollow, cylindrical product distinguished from pipe by thinner wall thickness. Tube is usually measured by its outside diameter. Pipe is generally measured by inside diameter.

Tundish. A refractory-lined vessel located between the ladle and the continuous caster. Molten steel is tapped from the ladle to the tundish for the purpose of providing a stable flow of metal into the caster.

Utility Operations. The ancillary operations at a steel mill necessary for mill operations, but not part of a production process (e.g., steam production in a boiler house; power generation; boiler water treatment; intake water treatment).

Vacuum Arc Remelt. A vacuum degassing process employing supplemental reheating in which a steel electrode having a chemical composition about the same as that of the desired product and usually in the same as-cast state is drip-melted into a water-cooled copper mold at a pressure not exceeding 0.1 Torr.

Vacuum Degassing. A process for removing dissolved gases from liquid steel by subjecting it to a vacuum.

Vacuum Ladle Degassing. A variation of vacuum degassing which includes induction stirring and vacuum-oxygen decarburization.

Vacuum-Oxygen Decarburization (VOD). A vacuum ladle degassing process which was designed for economical production of stainless steel. A charge of ferrochromium, ferrosilicon, stainless-steel scrap, burnt lime, and fluorspar is melted and heated to the desired tapping temperature, and then tapped into a preheated basic-lined ladle. The ladle is placed inside a vacuum chamber and the system is evacuated to a low pressure while oxygen is blown through a lance above the bath of steel and argon is blown through porous plugs in the bottom of the ladle.

Venturi Scrubber. A wet air pollution control device that operates by causing intermixing of particulates in a gas stream and water applied to the scrubber. The intermixing is accomplished by rapid contraction and expansion of the gas stream and a high degree of turbulence in the throat of the scrubber.

Vertical Shaft Furnace. A type of furnace used for pelletizing. Unbaked or green balls are charged through the top of the furnace, descend through the furnace countercurrent to the hot gases, and are discharged as pellets. The shaft furnace is well suited for pelletizing magnetite, but not hematite or limonitic materials.

Wastewater. See Process Wastewater.

Wastewater Treatment. The processing of wastewater by physical, chemical, biological, or other means to remove specific pollutants from the wastewater stream or to alter the physical or chemical state of specific pollutants in the wastewater stream. Treatment is performed for discharge of treated wastewater, recycle of treated wastewater to the same process which generated the wastewater, or for reuse of the treated wastewater in another process.

Water Bubble. See Alternate Effluent Limitations to Those Representing the Degree of Effluent Reduction Attainable by the Application of Best Practicable Control Technology Currently Available, Best Available Technology, and Best Conventional Technology, 40 CFR 420.03.

Wet Air Pollution Control Equipment. Venturi, orifice plate, or other units used to bring water into intimate contact with contaminated gas for the purpose of contaminant removal from the gas stream.

Wet-Open Combustion Gas Cleaning System. A BOF gas cleaning system in which excess air is admitted to the off-gas collection system, allowing carbon monoxide to combust prior to high-energy wet scrubbing for air pollution control.

Wet-Suppressed Combustion Gas Cleaning System. A BOF gas cleaning system in which the admission of excess air to the off-gas collection system prior to high-energy wet scrubbing for air pollution control is limited, thus minimizing combustion of carbon monoxide and the volume of gas requiring subsequent treatment.

Windbox. Sintering machine device for drawing air through the sinter strand to enhance the combustion of fuel in the sinter mix.

Wire. Small diameter steel section produced by cold drawing rod through one or more dies.

Zero Discharge or Alternative Disposal Methods. Disposal of process and/or nonprocess wastewaters other than by direct discharge to a surface water or by indirect discharge to a POTW or PrOTW. Examples include incineration, deep well injection, evaporation on slag or coke, and contract hauling.

SECTION 1

GENERAL SITE INFORMATION

GENERAL INSTRUCTIONS

This section of the survey is designed to collect general site information. The type of information requested includes site address; site and company contacts; and process operations at your site.

In order to understand the overall process, EPA is requiring in Question 1-9 that you provide a process flow diagram (PFD) showing the major manufacturing operations at your site. Because you will be asked to provide several PFDs with the survey, number each PFD in the upper right corner, starting with "PFD-1", and numbering each sequentially. Make sure your site ID number (shown on the cover page of Part A) is on each diagram.

Provide data in the requested units. Note that, in all cases, "tons" refers to "short tons" (2,000 pounds).

Refer to the Definitions Section for terms which are used in this survey.

If a particular part of the required information is not applicable to your site, enter "NA" rather than leaving the answer blank. Enter zero where appropriate. Do not leave an entry blank if the answer is zero.

If you have any comments on a question or you feel an answer needs clarification, use the Comments page at the end of the section. Be sure to cross-reference your comments by question number.

If you have any questions regarding the completion of this survey, contact the Technical Information Help Line at (800) 357-7075 or email your questions to steel_helpline@erg.com.

Indicate information which should be treated as confidential by checking the Confidential Business Information (CBI) box next to each question number with responses containing CBI. Any response where "CBI" is not checked will be considered nonconfidential. Refer to the instructions given in the PROVISIONS REGARDING DATA CONFIDENTIALITY section on page ii for additional information regarding EPA's confidentiality procedures set forth in 40 CFR Part 2, Subpart B. For this section, the CBI boxes begin with Question 1-7.

- 1-1.** If the site mailing address shown on the cover page for "Part A: Technical Information" is correct, check (✓) the box below. If it is not the correct address for this site, provide the correct site name and address in the spaces provided below.

G Address on cover page is correct (SKIP to Question 1-2)

Company Name	Site Address or P.O. Box
Subsidiary Name (if any)	Site Address continued
Site or Plant Name	City
	State Zip Code

- 1-2.** If the street (i.e., physical) address of your site is different from the mailing address on the cover page or given in Question 1-1, provide the street address in the spaces provided below. If the mailing address and street address are the same, check (✓) the box below.

G Address on cover page or response to Question 1-1 is physical address.

Street Address	City
Street Address continued	State Zip Code

- 1-3.** Provide the names, titles, telephone numbers, and facsimile numbers of the primary and secondary **contacts at your site for information supplied in Part A of this survey.**

Primary Contact Name	Secondary Contact Name
Primary Contact Title	Secondary Contact Title
() Telephone Number	() Telephone Number
() Facsimile Number	() Facsimile Number

- 1-4.** If applicable, provide the names, titles, telephone numbers, and facsimile numbers of the primary and secondary **central points of contact at your company for issues related to this rulemaking effort.** (These central points of contact may or may not be at the corporate headquarters or parent company level.)

G Contacts in Question 1-3 are the central points of contact (SKIP to Question 1-6)

Primary Contact Name	Secondary Contact Name
Primary Contact Title	Secondary Contact Title
() Telephone Number	() Telephone Number
() Facsimile Number	() Facsimile Number

-
- 1-5.** Provide the company name and street address for your central points of contact in the spaces provided below.

Company Name for Primary Contact

Street Address

City

Street Address continued

State

Zip Code

G Company name and address for Secondary Contact is same as address for Primary Contact (SKIP to Question 1-6)

Company Name for Secondary Contact

Street Address

City

Street Address continued

State

Zip Code

- 1-6.** What year did operations begin at your site? If unknown, estimate the date to the nearest year. Operations are any processes related to the iron and steel industry and not necessarily operations as they are currently performed. _____

- G CBI 1-7.** Check **ALL** types of steels produced and/or processed on site.

G Carbon

G Alloy

G Stainless

Carbon Steels. Steel which owes its properties chiefly to various percentages of carbon without substantial amounts of other alloying elements. Steel is classified as carbon steel when no minimum content of elements other than carbon is specified or required to obtain a desired alloying effect and when the maximum content for the following does not exceed the percentage noted: manganese, 1.65%; silicon, 0.60%; copper, 0.60 percent.

Alloy Steels. Steel is classified as alloy when the maximum of the range given for the content of alloying elements exceeds one or more of the following: manganese, 1.65%; silicon, 0.60%; copper, 0.60%; or in which a definite range or a definite minimum quantity of any of the following elements is specified or required within the limits of the recognized field of constructional alloy steels: aluminum, boron, chromium (less than 10%), cobalt, lead, molybdenum, nickel, niobium (columbium), titanium, tungsten, vanadium, zirconium, or any other alloying element added to obtain a desired alloying effect.

Stainless Steels. A trade name given to alloy steel that is corrosion and heat resistant. The chief alloying elements are chromium, nickel, and silicon in various combinations with possible small percentages of titanium, vanadium, and other elements. By American Iron and Steel Institute (AISI) definition, a steel is called "stainless" when it contains 10% or more chromium.

G CBI 1-8.

Provide for each manufacturing process and subprocess the number of operable units at your site and the number of units that were operated during all or part of **1997**. If you do not have an operable process or subprocess on site, enter "0" in the third column. If you did not have a process or subprocess operated during **1997**, enter "0" in the fourth column.

If the number of units that were operated during **1997** is less than the number of operable units on site, please note the reason for this on the Comments page at the end of Section 1.

If you have not received a survey section that corresponds with an operable process or subprocess you have on site, please contact the Technical Information Help Line at (800) 357-7075.

Operable Unit. Any on-site unit which is either: (1) currently operating; **OR** (2) idle, but not permanently shut down. Units may be idle for reasons such as market conditions, production outages, maintenance and rebuilding, or labor disputes.

Manufacturing Process	Subprocess	Number of Operable Units On Site	Number of Units Operated During 1997	Complete the following sections for each operable unit on site
Cokemaking	Coke batteries			2A
	By-product plants			2A
Sintering	Machines with any wet air pollution control			2B
	Machines with all dry air pollution control			2B
Briquetting Processes (and other agglomeration processes)				2C
Ironmaking	Iron blast furnaces			2D
	Direct-reduced iron furnaces			2E
Basic Oxygen Furnace Steelmaking	Vessels with semi-wet air pollution control (water added for gas conditioning)			2F
	Vessels with wet-suppressed combustion air pollution control			2F
	Vessels with wet-open combustion air pollution control			2F
Electric Arc Furnace Steelmaking	Furnaces with dry air pollution control (no water added for peak gas temperature control or gas conditioning)			2G
	Furnaces with semi-wet air pollution control (water added for peak gas temperature control or gas conditioning)			2G
	Furnaces with wet air pollution control (water used for gas cleaning)			2G
Vacuum Degassing Stations				2H
Ladle Metallurgy Stations (and other refining processes)				2I

- 1-8. (cont.)** Provide for each manufacturing process and subprocess the number of operable units at your site and the number of units that were operated during all or part of **1997**. If you do not have an operable process or subprocess on site, enter "0" in the third column. If you did not have a process or subprocess operated during **1997**, enter "0" in the fourth column.

Process	Subprocess	Number of Operable Units On Site	Number of Units Operated During 1997	Complete the following sections for each operable unit on site
Casting	Continuous casters			2J
	Ingot casting			2J
	Pressure casting			2J
Hot Forming Primary (bloom, slab)	Rolling mills without scarfers			2K
	Rolling mills with scarfers			2K
Hot Forming Flat (plate, strip, sheet, skelp)	Hot strip and sheet rolling mills			2K
	Plate rolling mills			2K
Hot Forming Pipe and Tube	Seamless mills (piercing)			2K
	Butt-welding mills			2K
Hot Forming Section Rolling Mills (none of the above)				2K
Hot Forming (other operations)	Extrusion operations			2K
	Drawing operations			2K
	Forging operations			2K
Acid Pickling	Sulfuric acid pickling lines			2L
	Hydrochloric acid pickling lines			2L
	Nitric acid pickling lines			2L
	Nitric/hydrofluoric acid pickling lines			2L
	Hydrofluoric acid pickling lines			2L
	Other (<i>specify</i>):			2L
Acid regeneration plants				2L
Descaling	Kolene® salt bath lines			2L
	Hydride® salt bath lines			2L
	Electrolytic sodium sulfate lines			2L
	Other (<i>specify</i>):			2L

- 1-8. (cont.)** Provide for each manufacturing process and subprocess the number of operable units at your site and the number of units that were operated during all or part of **1997**. If you do not have an operable process or subprocess on site, enter "0" in the third column. If you did not have a process or subprocess operated during **1997**, enter "0" in the fourth column.

Process	Subprocess	Number of Operable Units On Site	Number of Units Operated During 1997	Complete the following sections for each operable unit on site
Cold Forming	Rolling mills			2M
	Extrusion operations			2M
	Drawing operations			2M
	Forging operations			2M
Cold Forming Pipe and Tube (electric-resistance-welded) Operations				2M
Continuous Annealing Lines				2L or 2N
Stand-Alone (not performed in conjunction with another operation) Alkaline Cleaning Lines				2N
Hot Dip Coating	Zinc (galvanize) lines			2N
	Aluminum lines			2N
	Aluminum/zinc alloy lines			2N
	Tin/lead alloy (terne) lines			2N
	Other (specify):			2N
Electroplating	Zinc lines			2N
	Chromium lines			2N
	Tin lines			2N
	Zinc/nickel alloy lines			2N
	Other (specify):			2N
Other Surface Treatment Lines (specify):				2N
On-Site Utility Operations (see Section 2P for clarification)	Intake water pretreatment			2P
	Steam generation			2P
	Power generation			2P

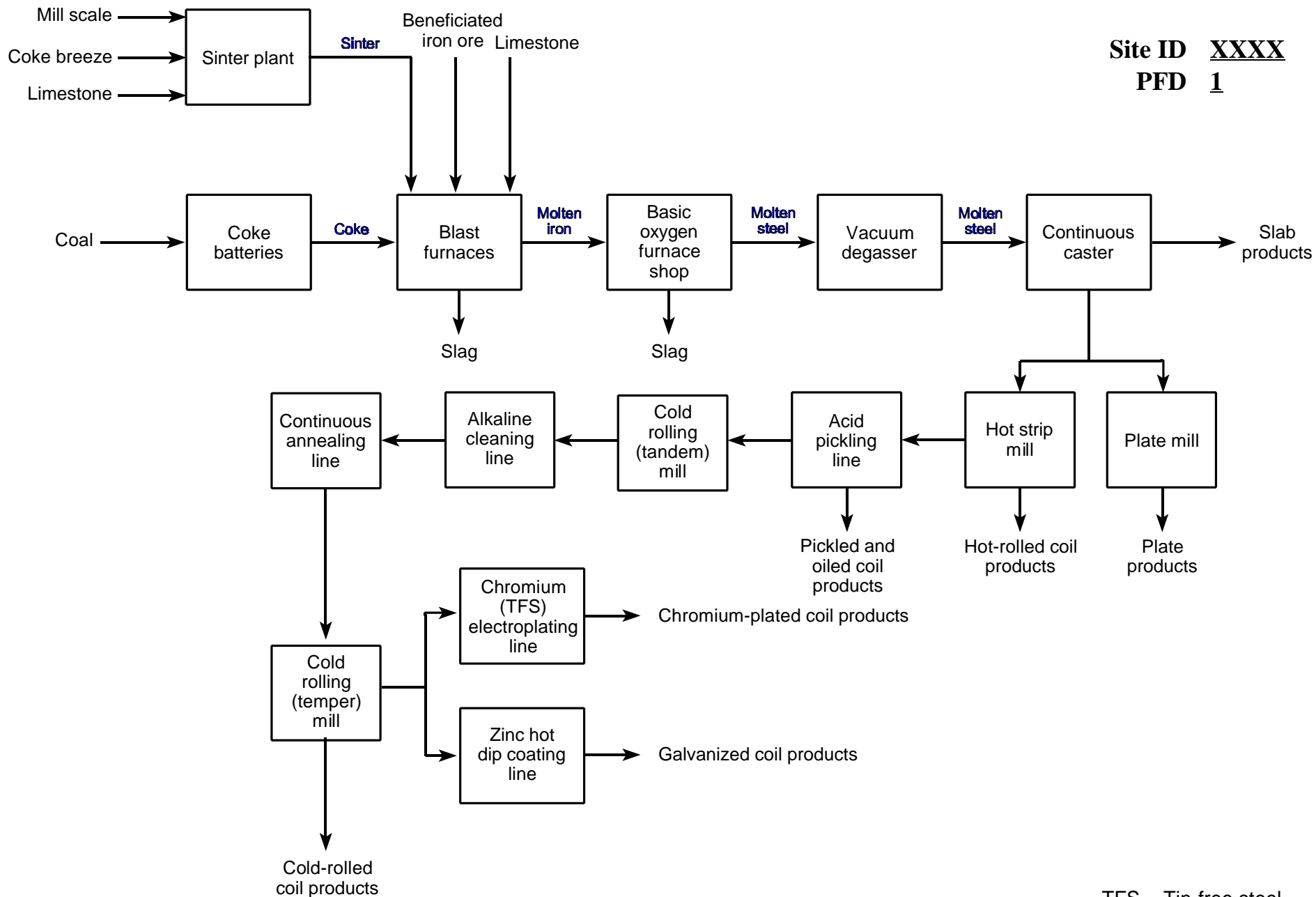
G CBI 1-9. Attach one or more general process flow diagrams (PFD) that show the production process(es) and the final products. You are **NOT** required to create a new PFD if an existing diagram will suffice. Number the diagrams in the upper right corner, and include your site ID number (as shown on the cover page of Part A). Specific instructions for including the PFD(s), along with an example diagram, are provided below.

Provide below the PFD number(s) assigned to the production process flow diagram(s). On the diagram(s), be sure to show the processes performed at your site, the major inputs into each process, and the final products which are produced. Review the process flow diagram checklist provided below. If you need assistance, call the Technical Information Help Line at (800) 357-7075.

PFD(s)-_____

Process Flow Diagram Checklist

Be sure...	✓
All processes on site are included.	G
The diagram of each production process includes the input of your starting materials (e.g., coal, iron ore, or limestone for an integrated mill; uncoated coils for a stand-alone finishing facility), the flow of the material through the processes, and the final products shipped.	G
All processes are labeled.	G
All products produced at your site are indicated and labeled.	G
The PFD number(s) and your site ID number have been written on each diagram(s).	G
If you believe that a diagram should be treated as confidential, stamp it "Confidential" or write "Confidential" or "CBI" across the top. If any diagram is not marked "Confidential", it will be considered nonconfidential under 40 CFR Part 2, Subpart B.	G



1-7

Production Process
Example Process Flow Diagram

TFS = Tin-free steel

G CBI 1-10. In the past five years (1993 through 1997), has your site permanently shut down any manufacturing processes or operations?

G Yes (describe the shut down(s) in the following table)

G No (SKIP to Question 1-11)

SHUT DOWNS			
Process	Date	Description of What Has Occurred	Production Capacity (tons/year)

G CBI 1-11. Has your site announced publicly that, in the next five years (1998 through 2002), it plans to start up any new manufacturing processes or operations, or that it plans to restart processes which were temporarily shut down?

G Yes (describe the start up(s) in the following table)

G No (SKIP to Section 2)

START UPS			
Process	Anticipated Date	Description of What Will Occur	Production Capacity (tons/year)

COMMENTS FOR SECTION 1: GENERAL SITE INFORMATION

Cross reference your comments by question number and indicate the confidential status of your comment by checking (✓) the box in the column titled "CBI" (Confidential Business Information). If you need additional space, photocopy this page before writing on it, and number each copy in the space provided in the upper right corner.

Question Number	CBI	Comment
	G	
	G	
	G	
	G	
	G	
	G	
	G	
	G	
	G	
	G	
	G	
	G	
	G	
	G	

SECTION 2

MANUFACTURING PROCESS INFORMATION

GENERAL INSTRUCTIONS

This section of the survey is organized into multiple subsections based on manufacturing operations. **You only need to complete those subsections which apply to this site.** Responses to Question 1-8 in Section 1 should correspond to which subsections will need to be completed. The following is a list of the subsections:

- 2A Cokemaking
- 2B Sintering
- 2C Briquetting (and Other Agglomeration Processes)
- 2D Blast Furnace Ironmaking
- 2E Direct-Reduced Ironmaking
- 2F Basic Oxygen Furnace Steelmaking
- 2G Electric Arc Furnace Steelmaking
- 2H Vacuum Degassing
- 2I Ladle Metallurgy (and Other Refining Processes)
- 2J Casting
- 2K Hot Forming
- 2L Acid Pickling and Descaling (Including Acid Regeneration)
- 2M Cold Forming
- 2N Surface Cleaning and Coating
- 2O SKIPPED
- 2P Utility Operations (Including Intake Water Treatment and Steam and Power Generation)

Carefully read the instructions that appear in each subsection and refer to the Definitions Section for terms which are used in this survey. Some **QUESTIONS** may need to be photocopied before responding if your site has multiple processes of the same type (e.g., wet air pollution control devices). For copied pages, number the copies using the space provided in the upper right corner of the page. Some **SECTIONS** may need to be photocopied before responding if your site has multiple processes or mills of the same type (e.g., hot forming mills, cold forming mills). For copied sections, number the copies using the space provided at the top of the pages.

In order to understand the overall process, EPA is requiring in each subsection that you attach to the survey a production process flow diagram (PFD) for each manufacturing process on site. You are **NOT** required to create a new PFD if an existing diagram will suffice. Because you are asked to attach several PFDs to the survey, number each PFD in the upper right corner, starting with "PFD-1", and numbering each sequentially. If you have already started numbering PFDs, use the next number in the sequence. Make sure your site ID number (shown on the cover page of Part A) is on each diagram.

Provide data in the requested units. Note that, in all cases, "tons" refers to "short tons" (2,000 pounds).

If a particular part of the required information is not applicable to your site, indicate by "NA" rather than leaving the answer blank. Enter zero where appropriate. Do not leave an entry blank if the answer is zero.

You are required to provide best engineering estimates when data are not readily available. If you provide an estimate, note the methods that were used to make the estimates on the Comments page at the end of each subsection.

If you have any comments on a question or you feel an answer needs clarification, use the Comments page at the end of each subsection. Be sure to cross-reference your comments by question number.

If you have any questions regarding the completion of this section of the survey, contact the Technical Information Help Line at (800) 357-7075 or email your questions to steel_helpline@erg.com.

Indicate information which should be treated as confidential by checking the Confidential Business Information (CBI) box next to each question number for which responses contain CBI. Any response where "CBI" is not checked will be considered nonconfidential. Refer to the instructions given in the PROVISIONS REGARDING DATA CONFIDENTIALITY section on page ii for additional information regarding EPA's confidentiality procedures set forth in 40 CFR Part 2, Subpart B.

SECTION 2A. COKEMAKING

TECHNICAL INFORMATION HELP LINE: (800) 357-7075



IS COKEMAKING PERFORMED AT THIS SITE?

G YES (CONTINUE)

G NO (SKIP TO SECTION 2B)

THROUGHOUT THIS SECTION, YOU WILL BE REQUIRED TO PROVIDE INFORMATION FOR **ALL** OPERABLE UNITS AND WATER SYSTEMS RELATED TO COKEMAKING WHICH WERE ON SITE DURING 1997, INCLUDING UNITS AND WATER SYSTEMS WHICH MAY HAVE BEEN IDLE FOR AN EXTENDED PERIOD OF TIME DUE TO CIRCUMSTANCES SUCH AS MARKET CONDITIONS, MAJOR REBUILDS, OR LABOR DISPUTES. IF AN OPERABLE UNIT OR WATER SYSTEM WAS NOT IN OPERATION DURING 1997, SUBSTITUTE THE MOST RECENT CALENDAR YEAR WHEN SUCH CIRCUMSTANCES DID NOT EXIST. NOTE THE YEAR OF OPERATION AND THE CIRCUMSTANCES IN THE COMMENTS AT THE END OF THIS SECTION, AND PROVIDE DATA FROM THAT CALENDAR YEAR.

G CBI 2A-1.a. What type of coke is produced at this site?

G Blast furnace coke

G Foundry coke

G Both

G CBI b. Provide the designation by which your site refers to your coke plant (e.g., Your Company's Coke Works). _____

G CBI 2A-2. What is the total rated cokemaking capacity of the entire coke plant (with moisture, but excluding coke breeze) in million tons per year?

_____ million tons/year (to three significant figures, e.g., 1.25 million tons/year)

G CBI 2A-3. Provide annual production data for cokemaking for each of the five calendar years 1993 through 1997.

Year	Coke Produced (tons/year) (with moisture, but excluding coke breeze)
1993	
1994	
1995	
1996	
1997	

G CBI 2A-4.

Indicate **ALL** by-products recovered at your site in calendar year 1997. Check (✓) **ALL** that apply. Provide annual production data for **EACH** by-product recovered in calendar year 1997. Provide data in the units indicated. For "Other Ammonia Products", "Other Sulfur Products", and "Other Products", specify the name(s) of the product(s) and the unit(s) of production.

By-Product	1997 Production	Units
G Coke Breeze		tons
G Coke Oven Gas		millions ft ³
G Crude Coal Tar (specify typical % moisture: _____ % moisture)		gallons
G Crude Light Oil		gallons
G Naphthalene		tons
G Ammonium Sulfate		tons
G Anhydrous Ammonia		tons
G Other Ammonia Products (<i>specify</i>): _		tons
G Elemental Sulfur		tons
G Other Sulfur Products (<i>specify</i>): _____		tons
G Other Products (<i>specify</i>): _____		(<i>specify</i>): _____
G Other Products (<i>specify</i>): _____		(<i>specify</i>): _____
G Other Products (<i>specify</i>): _____		(<i>specify</i>): _____
G Other Products (<i>specify</i>): _____		(<i>specify</i>): _____
G Other Products (<i>specify</i>): _____		(<i>specify</i>): _____



HOW MANY **OPERABLE COKE BATTERIES** WERE ON SITE DURING **1997**? _____

COMPLETE A COPY OF QUESTION 2A-5 FOR **EACH** OPERABLE COKE BATTERY. NUMBER EACH COPY OF QUESTION 2A-5 IN THE SPACE PROVIDED IN THE UPPER RIGHT CORNER. NOTE: QUESTION 2A-5 IS ONE PAGE LONG.

G CBI 2A-5.a. Provide the designation by which your site refers to this coke battery (e.g., Battery No. 12).

G CBI b. What was the first year of operation for this coke battery? _____

G CBI c. In what year did the last major rebuild of this battery occur? _____

Major Rebuild. Brickwork repairs at a coke battery where through-wall repairs (e.g., replacement of oven brickwork generally from the pusher side to the coke side and generally from above the oven floor to below the oven roof) are completed for more than half of the coke ovens in the battery within a period of 12 consecutive months.

G CBI d. What is the rated capacity of this battery for coke production (with moisture, but excluding coke breeze)?

_____ tons/year

G CBI e. What is the annual number of operating hours used to determine the rated capacity?

_____ hours/year

G CBI f. What materials were charged to this battery during calendar year **1997**? Check (✓) **ALL** that apply.

G Coal and coal blends

G Tar decanter sludge

G Wastewater treatment sludge

G Petroleum coke

G Coke plant tank cleanouts

G Other (*specify*): _____

G Other (*specify*): _____

G CBI g. Is the coal preheated for this battery?

G Yes

G No

G CBI h. Provide the typical coking time in hours for this battery.

_____ hours



HOW MANY **OPERABLE BY-PRODUCT RECOVERY PLANTS** WERE ON SITE DURING **1997**? _____ IF ZERO, SKIP TO QUESTION 2A-7.

COMPLETE A COPY OF QUESTION 2A-6 FOR **EACH** OPERABLE BY-PRODUCT RECOVERY PLANT. NUMBER EACH COPY OF QUESTION 2A-6 IN THE SPACE PROVIDED IN THE UPPER RIGHT CORNER. NOTE: QUESTION 2A-6 IS ONE PAGE LONG.

G CBI 2A-6.a. Indicate the designation by which your site refers to this by-product recovery plant.

G CBI b. What was the first year of operation for this by-product recovery plant? _____

G CBI c. What by-products are recovered? Check (✓) **ALL** that apply.

G Coke oven gas

G Crude coal tar (*specify typical % moisture*): _____ % moisture

G Crude light oil

G Naphthalene

G Ammonium sulfate

G Anhydrous ammonia

G Other ammonia products (*specify which products*): _____

G Elemental sulfur

G Other sulfur products (*specify which products*): _____

G Other products (*specify*): _____

G CBI d. If elemental sulfur or other sulfur products are checked above, specify the coke oven gas desulfurization system manufacturer. If neither are checked above, check (✓) the box to the right and SKIP to Question 2A-6.e. **G**

G CBI e. Indicate any by-products refining processes performed on site at this plant. Check (✓) **ALL** that apply.

G Coal tar distillation

G Recovery of benzene

G Recovery of toluene

G Recovery of ethylbenzene

G Recovery of xylene

G Other (*specify*): _____

G None



HOW MANY **OPERABLE WET AIR POLLUTION CONTROL (WAPC) SYSTEMS** WERE ON SITE AT THE COKE PLANT (INCLUDING BY-PRODUCT RECOVERY OPERATIONS) DURING **1997**? A WAPC SYSTEM COULD INCLUDE MULTIPLE DEVICES SERVING THE SAME PROCESSING UNIT. _____

COMPLETE A COPY OF QUESTION 2A-7 FOR **EACH** OPERABLE WAPC SYSTEM. NUMBER EACH COPY OF QUESTION 2A-7 IN THE SPACE PROVIDED IN THE UPPER RIGHT CORNER. NOTE: QUESTION 2A-7 IS THREE PAGES LONG.

IF YOUR SITE DOES NOT HAVE WET AIR POLLUTION CONTROL ASSOCIATED WITH THIS COKE PLANT, **CHECK THE BOX TO THE RIGHT AND SKIP TO QUESTION 2A-8.** **G**

- G CBI 2A-7.a.** Provide, the designation(s) of the battery, by-product recovery plant, and all other operations associated with this WAPC system. Battery and by-product recovery plant designation(s) should correspond with response(s) to Questions 2A-5.a. or 2A-6.a. If information for this WAPC system is already provided elsewhere in this survey, answer Question 2A-7.a., check the box to the right, and SKIP to Question 2A-8. **G**

- G CBI b.** This WAPC system controls emissions from which of the following processes? Check (✓) **ALL** that apply.

G Handling, crushing, and blending of coal

G Coal preheater

G Larry car coal charging

G Pipeline coal charging

G Coke pushing

G Handling, crushing, and blending of coke

G By-product recovery (*specify*): _____

G Other (*specify*): _____

- G CBI c.** Indicate the devices in this WAPC system. Check (✓) **ALL** that apply.

G Venturi scrubber

G Demister

G Spray chamber

G Packed tower

G Evaporation chamber

G Other (*specify*): _____

G Separator

G Other (*specify*): _____

- G CBI d.** Provide the gas or air flow through the system in dry standard cubic feet per minute (dscfm).

_____ dscfm

- G CBI e.** Is the water recirculated or applied once-through?

G Recirculated (continue)

G Once-through (SKIP to Question 2A-7.i.)

- G CBI f.** Is any treatment and/or conditioning (e.g., chemical additions) performed in the recirculating loop?

G Yes (continue)

G No (SKIP to Question 2A-7.j.)

COMPLETE A COPY OF QUESTION 2A-7 FOR EACH OPERABLE WAPC SYSTEM.

- G CBI 2A-7.g. (cont.)** Does the treatment in the recirculating loop also treat wastewater from other processes?
- G** No - Dedicated treatment
- G** Yes - Treatment shared with other processes
- Specify the processes: _____
- G CBI h.** Check (✓) ALL treatment units and/or treatment processes which are included in the recirculating loop.
- | | |
|---|---|
| G Clarifiers | G Oil skimmers |
| G Classifiers | G Scale pits |
| G Cooling towers | G Sludge dewatering units (e.g., vacuum filter, pressure filtration, etc.) |
| G Earthen Lagoons | G Water filters (e.g., sand, multimedia, etc.) |
| G Lined (<i>specify liner type</i>): | G Water softeners |
| G Clay | G Other (<i>specify</i>): _____ |
| G Synthetic | G Other (<i>specify</i>): _____ |
| G Other (<i>specify</i>): _____ | G None |
| G Unlined | |
- G CBI i.** Indicate chemical additions to the water recirculation system. Check (✓) ALL that apply.
- | | |
|-------------------------------------|--|
| G Acid | G Scale inhibitor |
| G Caustic (sodium hydroxide) | G Surfactant |
| G Corrosion inhibitor | G Other (<i>specify</i>): _____ |
| G Lime | G Other (<i>specify</i>): _____ |
| G Polymer | G None |
- G CBI j.** Provide the design flow of water through the recirculating loop. _____ gpm
- G CBI k.** Provide the average recirculation rate of water through the WAPC system and period of operation.
- _____ gpm _____ hours per day _____ days per year
- G CBI l.** Provide the average rate at which new water is added to the system and period of water addition (for once-through systems, provide the influent flow rate; for recirculating systems, provide the makeup flow rate).
- _____ gallons per day _____ days per year

COMPLETE A COPY OF QUESTION 2A-7 FOR EACH OPERABLE WAPC SYSTEM.

- G CBI 2A-7.m. (cont.)** Indicate ALL sources for water addition. Provide the estimated percentage of water contributed by each source. The percentages should add to 100 percent.
- G** Plant service water (city, well, or surface water which has not been used elsewhere on site) _____ %
- G** Noncontact cooling water (*specify manufacturing process(es)*): _____ %
- _____
- G** Treated process wastewater (*specify manufacturing process(es)*): _____ %
- _____
- G** Untreated process wastewater (*specify manufacturing process(es)*): _____ %
- _____
- G** Treated storm water (*specify manufacturing process(es) or other collection area(s)*): _____ %
- _____
- G** Untreated storm water (*specify manufacturing process(es) or other collection area(s)*): _____ %
- _____
- G** Other (*specify*): _____ %
- Total: 100 %
- G CBI n.** Provide the average discharge rate from the system and period of discharge (for recirculating systems, provide the blowdown rate).
- _____ gpm _____ hours per day _____ days per year
- OR:** _____ gallons per day _____ days per year
- G CBI o.** Indicate the destination of wastewater discharge or blowdown. Check (✓) ALL that apply.
- G** Coke plant treatment system
- G** Discharge to other treatment system (*specify system*): _____
- _____
- G** Discharge without treatment by pipeline, sewer, or other conveyance to surface water (*specify outfall number*): _____
- G** Discharge without treatment by pipeline, sewer, or other conveyance to POTW (*specify designation for permit monitoring location*): _____
- _____
- G** Discharge without treatment by pipeline, sewer, or other conveyance to PrOTW (*specify designation for permit monitoring location if applicable*): _____
- G** Zero discharge or alternative disposal methods:
- G** Coke quenching without treatment
- G** Coke quenching with treatment
- G** Deep-well injection
- G** Evaporation (*specify method*): _____
- G** Percolation pond
- G** Spray irrigation
- G** Contract hauled
- (*specify disposal rate, including transportation*): \$ _____ per gallon
- (*specify destination/disposal method*): _____
- G** Incineration
- G** Other (*specify*): _____

G CBI 2A-8.a. Are any dry air pollution control (DAPC) systems associated with the coke plant (including by-product recovery operations)?

G Yes (continue)

G No (SKIP to Question 2A-9)

G CBI b. Indicate the process(es) associated with DAPC systems in the coke plant (including by-product recovery operations). Check (✓) **ALL** that apply. For each process checked, indicate the type of DAPC system.

Process	Type of DAPC System
G Handling, crushing, and blending of coal	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G Coal preheater	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G Larry car coal charging	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G Pipeline coal charging	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G Coke pushing	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G Handling, crushing, and blending of coke	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G By-product recovery (<i>specify</i>):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G By-product recovery (<i>specify</i>):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G By-product recovery (<i>specify</i>):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G Other (<i>specify</i>):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):
G Other (<i>specify</i>):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (<i>specify</i>):



EXCLUDING WAPC SYSTEMS AND STORM WATER, HOW MANY OTHER WASTEWATER SOURCES FROM THE COKE PLANT (INCLUDING BY-PRODUCT RECOVERY OPERATIONS) ARE PRESENT? _____

COMPLETE A COPY OF QUESTION 2A-9 FOR **EACH** COKE PLANT WASTEWATER SOURCE. NUMBER EACH COPY OF QUESTION 2A-9 IN THE SPACE PROVIDED IN THE UPPER RIGHT CORNER. NOTE: QUESTION 2A-9 IS TWO PAGES LONG.

IF YOUR SITE HAS NO COKE PLANT SOURCES WHICH CONTRIBUTE PROCESS WASTEWATER NOT ASSOCIATED WITH A WAPC SYSTEM OR STORM WATER, **CHECK THE BOX TO THE RIGHT AND SKIP TO QUESTION 2A-10.**

G

2A-9. Provide information for the coke batteries, the by-product recovery plants, and related on-site wastewater generating sources.

G CBI a. Indicate the source of process wastewater **NOT** associated with wet air pollution control or storm water. If there is more than one source at this site, complete a copy of this question for **EACH** coke plant source.

- | | |
|--|--|
| G Excess ammonia liquor | G Recovery of benzene |
| G Coke oven gas condensates | G Recovery of xylene |
| G Coke quench runoff | G Recovery of toluene |
| G Blast furnace gas condensates | G Recovery of ethylbenzene |
| G Caustic solution from ammonia still | G Benzene NESHAPs control (see definitions) |
| G Steam condensate from ammonia still | G Ground water treatment units |
| G Ammonia recovery | G Equipment cleaning and washdown water |
| G Coke oven gas desulfurization | G Other (specify): _____ |
| G Crude light oil recovery | |
| G Coal tar distillation | |

G CBI b. For equipment cleaning and washdown water or any "other" source specified above, provide a list of chemicals or pollutants known or believed to be present in this source. If a list is readily available, attach it to the survey with this question number and your site ID written on the upper right corner. If a chemical or pollutant originates from a commercial cleaning solution (e.g., solutions used to clean and wash equipment), provide the vendor name of the cleaning product and the product code, if known.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

G CBI c. Provide the wastewater flow rate and period of discharge associated with the source checked above.

_____ gpm _____ hours per day _____ days per year

OR: _____ gallons per day _____ days per year

COMPLETE A COPY OF QUESTION 2A-9 FOR EACH COKE PLANT SOURCE GENERATING PROCESS WASTEWATER
NOT ASSOCIATED WITH A WAPC SYSTEM OR STORM WATER.

- G CBI 2A-9.d. (cont.) Indicate the destination of this wastewater stream. Check (✓) ALL that apply.
- G Coke plant treatment system
 - G Discharge to other treatment (*specify treatment system*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to surface water (*specify outfall number*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to POTW (*specify designation for permit monitoring location*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to PrOTW (*specify designation for permit monitoring location if applicable*): _____
 - G Zero discharge or alternative disposal methods:
 - G Coke quenching without treatment
 - G Coke quenching with treatment
 - G Deep-well injection
 - G Evaporation (*specify method*): _____
 - G Percolation pond
 - G Spray irrigation
 - G Contract haul
(*specify disposal rate, including transportation*): \$ _____ per gallon
(*specify destination/disposal method*): _____
 - G Incineration
 - G Other (*specify*): _____



COKE PLANTS MAY GENERATE BY-PRODUCTS THAT ARE RECOVERED AT AN OFF-SITE LOCATION UNDER SEPARATE OWNERSHIP. THIS OFF-SITE LOCATION, IN THE PROCESS OF RECOVERING BY-PRODUCTS, MAY SEND PROCESS WASTEWATER BACK TO YOUR SITE FOR TREATMENT.

HOW MANY **OFF-SITE SOURCES GENERATE PROCESS WASTEWATER** WHICH IS TREATED AT THIS SITE? _____

COMPLETE A COPY OF QUESTION 2A-10 FOR **EACH** OFF-SITE SOURCE. NUMBER EACH COPY OF QUESTION 2A-10 IN THE SPACE PROVIDED IN THE UPPER RIGHT CORNER. NOTE: QUESTION 2A-10 IS TWO PAGES LONG.

IF YOUR SITE DOES NOT RECEIVE PROCESS WASTEWATER FROM AN OFF-SITE SOURCE, **CHECK THE BOX TO THE RIGHT AND SKIP TO QUESTION 2A-11.**

G

G CBI 2A-10.a. Indicate which off-site source contributes process wastewater to this site. If there is more than one off-site source, complete a copy of this question for **EACH** source.

G Excess ammonia liquor

G Coal tar distillation

G Coke oven gas condensates

G Recovery of benzene

G Caustic solution from ammonia still

G Recovery of xylene

G Steam condensate from ammonia still

G Recovery of toluene

G Ammonia recovery

G Recovery of ethylbenzene

G Coke oven gas desulfurization

G Ground water treatment units

G Crude light oil recovery

G Other (*specify*): _____

G CBI b. For any "other" sources specified above, provide a list of chemicals or pollutants known or believed to be present in this source of process wastewater. If a list is readily available, attach it to the survey with this question number and your site ID written on the upper right corner.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

G CBI c. Provide the wastewater flow rate and period of discharge associated with the source checked above.

_____ gpm _____ hours per day _____ days per year

OR: _____ gallons per day _____ days per year

COMPLETE A COPY OF QUESTION 2A-10 FOR EACH OFF-SITE SOURCE GENERATING PROCESS WASTEWATER.

- G CBI 2A-10.d. (cont.) Indicate the destination of this wastewater stream. Check (✓) **ALL** that apply.
- G Coke plant treatment system
 - G Discharge to other treatment (*specify treatment system*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to surface water (*specify outfall number*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to POTW (*specify designation for permit monitoring location*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to PrOTW (*specify designation for permit monitoring location if applicable*): _____
 - G Zero discharge or alternative disposal methods:
 - G Coke quenching without treatment
 - G Coke quenching with treatment
 - G Deep-well injection
 - G Evaporation (*specify method*): _____
 - G Percolation pond
 - G Spray irrigation
 - G Contract hauled
(*specify disposal rate, including transportation*): \$ _____ per gallon
(*specify destination/disposal method*): _____
 - G Incineration
 - G Other (*specify*): _____

G CBI 2A-11. Provide information for **ALL** water sources used for coke quenching **NOT** previously identified in Questions 2A-7, 2A-9, and 2A-10. Indicate whether the following sources are used for coke quenching and the associated flow rates and periods of operation (gallons per minute, hours per day, days per year, gallons per day).

Water Source	Used for Coke Quenching	Flow Rate
Plant service water (city, well, or surface water which has not been used elsewhere on the site)	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Noncontact cooling water (<i>specify manufacturing process(es)</i>):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Treated coke plant wastewater	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Untreated coke plant wastewater	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Treated wastewater from other sources (<i>specify</i>):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Untreated wastewater from other sources (<i>specify</i>):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Treated storm water (<i>specify manufacturing process(es) or other collection area(s)</i>):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Untreated storm water (<i>specify manufacturing process(es) or other collection area(s)</i>):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Other sources (<i>specify</i>):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy

-
- G CBI 2A-12.** Provide information on any major process modifications and/or shut downs which have occurred at the coke plant (including by-products recovery operations) since 1993. Provide the coke battery or by-product recovery plant designations in the description. Designation(s) should correspond with response(s) to Questions 2A-5.a or 2A-6.a.

Shut Down or Modification?	Date	Description

- G CBI 2A-13.** Provide information on any publicly announced process modifications and/or shut downs planned to occur during the next five years (1998 to 2002) at the coke plant (including by-products recovery operations). Provide the coke battery or by-product recovery plant designations in the description. Designation(s) should correspond with response(s) to Questions 2A-5.a or 2A-6.a.

Shut Down or Modification?	Anticipated Date	Description

G CBI 2A-14. Indicate **ALL** pollution prevention (waste reduction) or management practices implemented by your site for the coke plant (including by-products recovery operations) and describe the practice as it is implemented. Describe all processes where wastes are recovered for reuse or sold as a raw material feedstock. Discuss the percent recovered. Provide the coke battery or by-product recovery plant designations in the description. Designation(s) should correspond with response(s) to Questions 2A-5.a or 2A-6.a.

Management Practices	Description of Practice
G Management of spillage and losses from raw material unloading operations associated with the coke plant	
G Management of runoff from raw material storage piles associated with the coke plant	
G Management of fugitive discharges of process wastewaters and materials to coke plant noncontact cooling water systems	
G Management of coke oven gas condensates	
G Management of runoff/leachate and ground water contamination from coke batteries, coke quench tower sumps, or by-products recovery areas	
G Collection and treatment and/or disposal of storm water from any areas (e.g., coal processing and coal storage) associated with the coke plant (specify manufacturing processes or other collection areas in the description)	
G Collection and treatment and/or disposal of landfill leachate from any landfills associated with coke plant wastes	
G Management and use of tar decanter sludge	

- G CBI 2A-14. (cont.)** Indicate **ALL** pollution prevention (waste reduction) or management practices implemented by your site for the coke plant (including by-products recovery operations) and describe the practice as it is implemented. Describe all processes where wastes are recovered for reuse or sold as a raw material feed stock. Discuss the percent recovered. Provide the coke battery or by-product recovery plant designations in the description. Designation(s) should correspond with response(s) to Questions 2A-5.a or 2A-6.a.

Management Practices	Description of Practice
G Management of wastewater and sludges from coke plant and by-products recovery plant tank clean-outs	
G Management of excess activated sludge from biological treatment	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	

Attach a process flow diagram (PFD) that shows the cokemaking process and the water use associated with the process. You are **NOT** required to create a new PFD if an existing diagram will suffice. Number the diagram in the upper right corner, and include your site ID number (as shown on the cover page of Part A). Specific instructions for including the PFD, along with example diagrams, are provided below. **Flow rates are NOT required on the diagrams.**

Provide the PFD numbers assigned to the coke plant PFD and the by-products recovery plant PFD. If by-products recovery is not performed, write "NA". **If the processes are already shown on a PFD provided elsewhere in this survey, provide the PFD number and review the following list for completeness.** If you need assistance, call the Technical Information Help Line at (800) 357-7075.

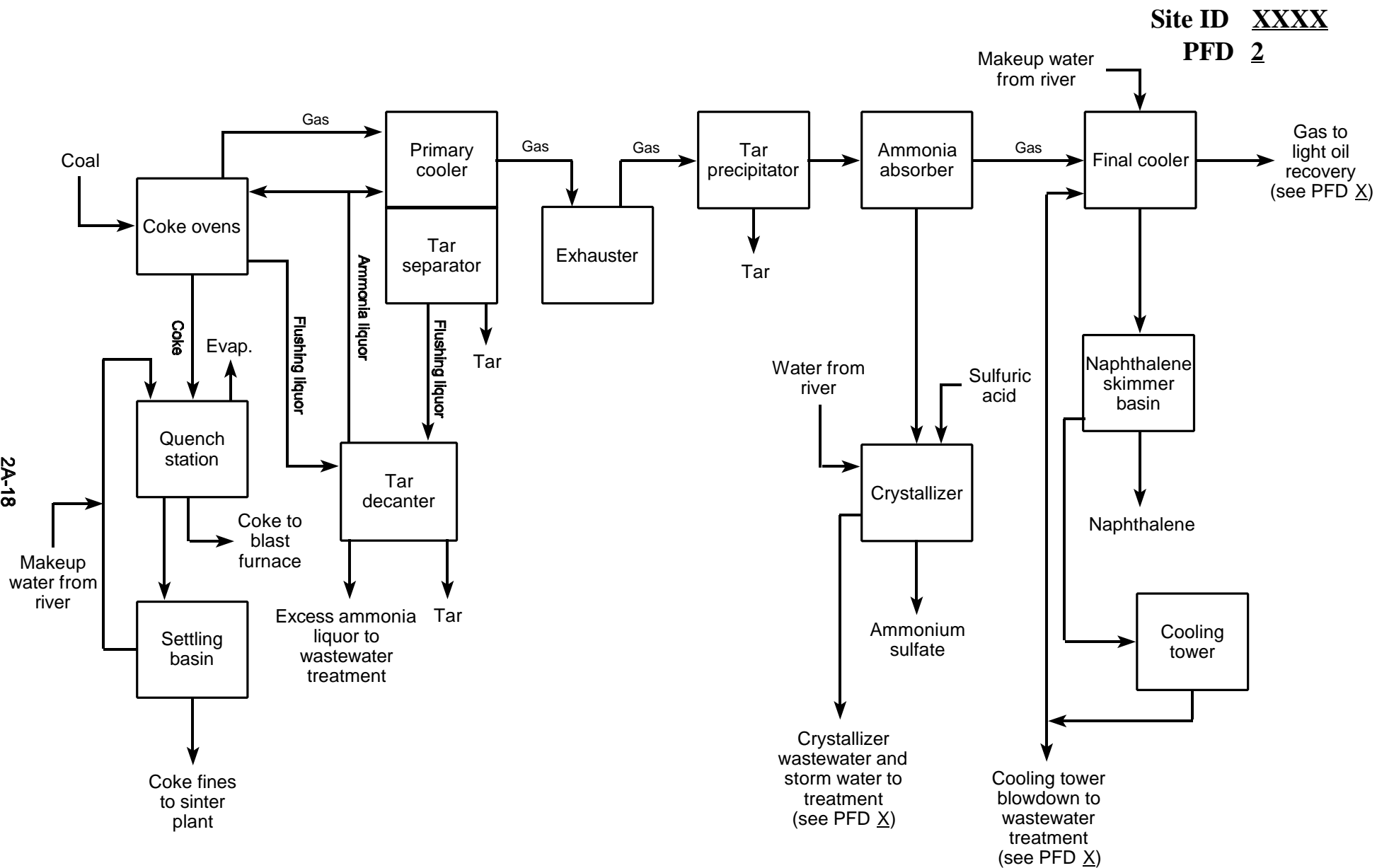
Coke plant PFD-_____.

By-products recovery plant PFD-_____.

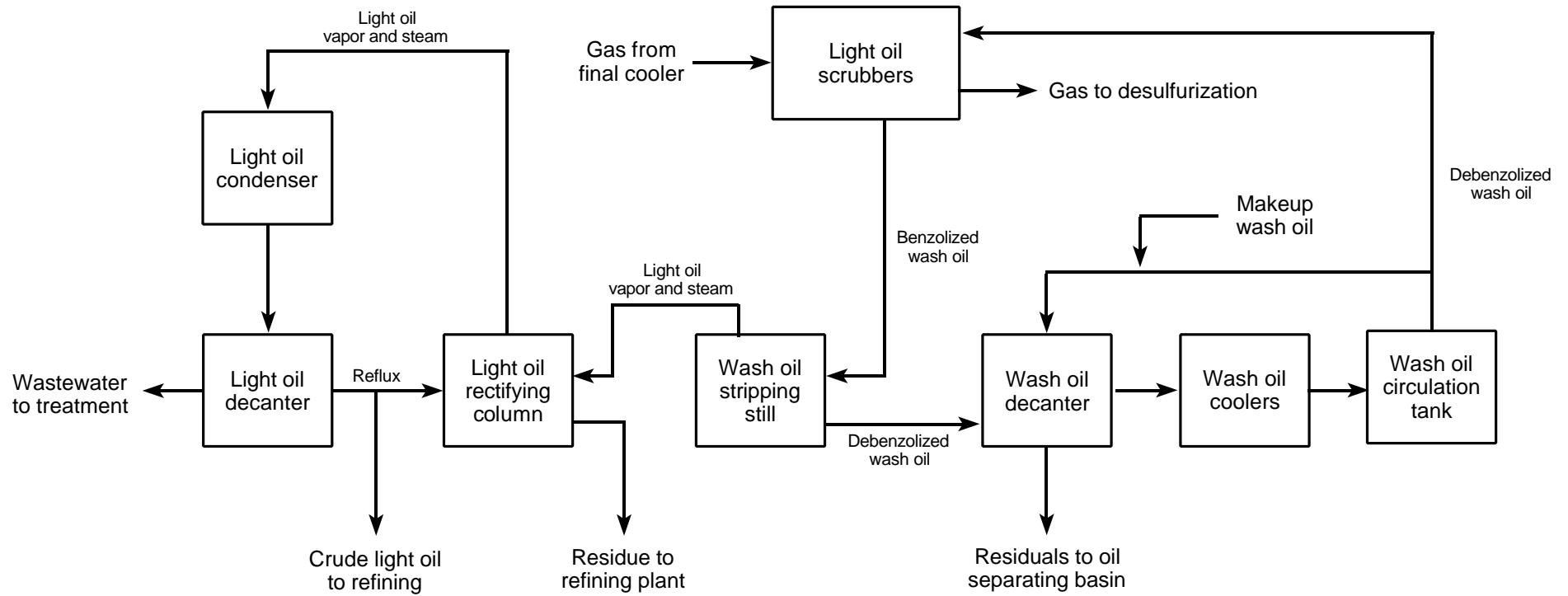
Process Flow Diagram Checklist

Be sure...	✓
All coke battery, by-products recovery, and by-products refining operations are included. Include those operations which do not generate process wastewater.	G
All air pollution control systems are included. Label each system as being either wet or dry. Water streams for all wet air pollution control systems must be shown, including all recycle streams and all treatment processes within recycle loops.	G
Coke quenching and all water and wastewater streams used for coke quenching are shown.	G
Any recycle or reuse of process wastewater or other waters is indicated clearly on the diagram.	G
Any in-process wastewater treatment or reuse technologies are indicated. Show and label all treatment units and all recycle loops.	G
Significant losses of water (e.g., evaporation) are shown.	G
All materials entering each operation and all products, by-products, and wastes exiting each operation are identified. Wastes include wastewater, sludges, baghouse dust, and point-source air emissions. Noncontact cooling water systems which do not contain process wastewater and do not discharge to process wastewater systems do not need to be included.	G
All process wastewater streams are identified. When sources and destinations of process wastewater are not shown on the diagram (i.e., the stream is entering from or exiting to a location not shown on the diagram), describe the source or destination (e.g., "from river" or "to wastewater treatment") and add the PFD number, when appropriate, where the stream's previous or next location can be seen.	G
The PFD number and your site ID number are written on the diagrams.	G
If you believe that the diagram should be treated as confidential, stamp it "Confidential" or write "Confidential" or "CBI" across the top. If any diagram is not marked "Confidential", it will be considered nonconfidential under 40 CFR Part 2, Subpart B.	G

2A-18



**By-Product Coke Plant
Example Process Flow Diagram**



Light Oil Recovery Example Process Flow Diagram

2A-19



IS ANY WASTEWATER TREATMENT PERFORMED AT YOUR COKE PLANT?

G YES (CONTINUE)

G NO (SKIP TO QUESTION 2A-32)



FOR PURPOSES OF THIS SURVEY, EPA IS REQUIRING INFORMATION ABOUT WASTEWATER TREATMENT YOU PROVIDE FOR ALL WASTEWATER GENERATED AT YOUR COKE PLANT EXCEPT TREATMENT OF SANITARY WASTEWATER. IN ORDER TO UNDERSTAND THE SPECIFICS OF YOUR TREATMENT SYSTEM(S), EPA IS REQUIRING THAT YOU COMPLETE A COPY OF QUESTIONS 2A-16 THROUGH 2A-31 FOR **EACH** IN-PROCESS WASTEWATER TREATMENT SYSTEM, **EACH** WASTEWATER PRETREATMENT SYSTEM, AND **EACH** END-OF-PIPE (FINAL) WASTEWATER TREATMENT SYSTEM AT YOUR COKE PLANT. EPA ASKS YOU TO BREAK DOWN AND DESCRIBE THE TREATMENT SYSTEM(S) AT THE COKE PLANT USING THE FOLLOWING DEFINITIONS.

IN-PROCESS WASTEWATER TREATMENT SYSTEM: A PROCESS WASTEWATER OR CHEMICAL SOLUTION TREATMENT SYSTEM TYPICALLY LOCATED AT OR NEAR A MANUFACTURING PROCESS FOR THE PURPOSE OF RETURNING WATER TO THE PROCESS. AN IN-PROCESS WASTEWATER TREATMENT SYSTEM TYPICALLY HAS A BLOWDOWN WHICH MAY OR MAY NOT RECEIVE FURTHER TREATMENT.

WASTEWATER PRETREATMENT SYSTEM: A SYSTEM FOR SEGREGATED WASTEWATERS WITH SPECIFIC POLLUTANT CHARACTERISTICS (E.G., HEXAVALENT CHROMIUM, HIGH OIL CONTENT). A WASTEWATER PRETREATMENT SYSTEM PRETREATS SEGREGATED WASTEWATERS FOR THOSE SPECIFIC POLLUTANT CHARACTERISTICS BEFORE DISCHARGING TO ANOTHER FINAL (TYPICALLY END-OF-PIPE) WASTEWATER TREATMENT SYSTEM.

END-OF-PIPE (FINAL) WASTEWATER TREATMENT SYSTEM: A SYSTEM WHICH RECEIVES AND TREATS WASTEWATERS FROM ANY COMBINATION OF THE FOLLOWING: PROCESS DISCHARGES, IN-PROCESS WASTEWATER TREATMENT SYSTEM DISCHARGES, STORM WATERS, OR PRETREATMENT SYSTEM DISCHARGES.

HOW MANY **OPERABLE WASTEWATER TREATMENT SYSTEMS** (AS DEFINED ABOVE) WERE ON SITE AT THE COKE PLANT DURING 1997?

- _____ IN-PROCESS WASTEWATER TREATMENT SYSTEM
 _____ WASTEWATER PRETREATMENT SYSTEM
 _____ END-OF-PIPE (FINAL) WASTEWATER TREATMENT SYSTEM

COMPLETE A COPY OF QUESTIONS 2A-16 THROUGH 2A-31 FOR **EACH** TREATMENT SYSTEM AT THE COKE PLANT. NUMBER EACH COPY OF QUESTIONS 2A-16 THROUGH 2A-31 IN THE SPACE PROVIDED AT THE TOP OF EACH PAGE.
 NOTE: QUESTIONS 2A-16 THROUGH 2A-31 ARE 23 PAGES LONG.

G CBI 2A-16. What is the site designation for this treatment system (e.g., Coke Plant Biological Treatment System)? _____

G CBI 2A-17. Indicate the type of this wastewater treatment system, using the definitions above.

- G** In-Process Wastewater Treatment System (including recycle systems)
G Wastewater Pretreatment System
G End-of-Pipe (Final) Wastewater Treatment System

G CBI 2A-18. Does this wastewater treatment system cotreat wastewaters generated by another manufacturing process?

G Yes (Check (✓) **ALL** that apply):

- G** Sinter plant
G Blast furnace
G Other (specify): _____
G Other (specify): _____
G Other (specify): _____
G Other (specify): _____

G No

G CBI 2A-19.

Attach a process flow diagram (PFD) that shows this coke plant wastewater treatment system and the water flow through this treatment system. You are **NOT** required to create a new PFD if an existing diagram will suffice. Number the diagram in the upper right corner, and include your site ID number (as shown on the cover page of Part A). Specific instructions for including the PFD, along with an example diagram, are provided below.

For each unit shown on the diagram, identify the unit operation being performed using the codes from the list of Wastewater Treatment Unit Codes on the following page. Use a numbering scheme for all units shown on the diagram so each unit has a unique number. For example, if a diagram shows one cooling tower and two primary clarifiers, identify these units as: CT-1, C1-1, and C1-2. See the example figures for further clarification. In Question 2A-21, you are asked to provide design parameters for certain wastewater treatment operations. For that question, you will need to refer to the unit code list to identify which parameters need to be provided. **Flow rates are NOT required on the diagram.**

Provide the PFD number assigned to this wastewater treatment system PFD. **If the wastewater treatment system is already shown on a PFD provided elsewhere in this survey, provide the PFD number and review the following list for completeness.** Because in-process wastewater treatment systems, pretreatment systems, and end-of-pipe wastewater treatment systems are often linked, EPA expects that these systems may be shown together on existing figures, and they may be provided in that form. If you need assistance, call the Technical Information Help Line at (800) 357-7075.

Coke plant wastewater treatment system PFD-_____

Process Flow Diagram Checklist

Be sure...

- | | |
|---|--------|
| All sources entering the treatment system are identified and labeled. Sources include but are not limited to: process wastewater, storm water, effluent from other treatment systems (specify PFD number for other treatment systems), ground water, noncontact cooling water, utility wastewater, and landfill leachate. | ✓
G |
| All treated wastewater destinations are identified and labeled. Destinations include surface water (specify name), POTWs, reuse in other manufacturing processes (specify processes), other wastewater treatment systems (specify systems), and on-site and off-site disposal locations. | G |
| All appropriate wastewater treatment unit codes (listed on the following pages) have been added to the diagram. | G |
| Return streams for all filtrates, supernatants, or other recycle streams are labeled. | G |
| Significant losses of water (e.g., evaporation) are shown. | G |
| Tars, sludges, oils, and other by-products and wastes leaving the system and their destinations are identified and labeled. | G |
| Permit monitoring locations and outfall numbers are identified and labeled. | G |
| The PFD number and your site ID number are written on the diagram. | G |
| If you believe that the diagram should be treated as confidential, stamp it "Confidential" or write "Confidential" or "CBI" across the top. If any diagram is not marked "Confidential", it will be considered nonconfidential under 40 CFR Part 2, Subpart B. | G |

WASTEWATER TREATMENT UNIT CODES		
Code		Design Parameters of Interest
AC	= Activated carbon system	carbon bed dimensions, empty bed RT, gpm per cubic foot carbon
AE	= Aeration tank or basin (not used for biological treatment)	air flow rate, total aeration hp and type, RT, dimensions, volume, construction material
AS	= Ammonia still - fixed	operating pressure, reflux ratio, pH control system, pH control material (caustic, soda ash, lime), construction material, controls (automated, manual)
AF	= Ammonia still - free	
BT	= Biological treatment tank - (<i>specify type with design parameter</i>)	dimensions, food to microorganism (F/M) ratio, mean cell RT, reactor type
CM	= Chemical mix tank	tank dimensions, mixer size (hp) and type
C1	= Clarifier - primary	RT, surface-loading rate ("overflow rate"), dimensions, tank shape
C2	= Clarifier - secondary	
CL	= Classifier	None
CP	= Cooling pond	RT, dimensions
CT	= Cooling tower	wet bulb temperature, approach temperature
CD	= Cyanide destruction system	None
CY	= Cyanide precipitation system	None
DP	= Dephenolizer	None
DF	= Dissolved air flotation tank or basin	RT, dimensions
EL	= Earthen lagoon - lined (not used for biological treatment)	RT, dimensions, liner type and depth
EU	= Earthen lagoon - unlined (not used for biological treatment)	RT, dimensions
EQ	= Equalization tank or basin	RT, dimensions, volume, mixing system, construction material, aerated or not, total aeration hp and type, or cfm of air blowers
EV	= Evaporator	operating temperature, dimensions, rate of evaporation
FM	= Filter - multimedia	gpm per square foot, bed dimensions and type, number of units, media (if multimedia), pressure or gravity
FS	= Filter - sand	
FO	= Filter - other (<i>specify type with design parameters</i>)	
FC	= Flocculation/coagulation tank	RT, dimensions
HE	= Heat exchanger, noncontact	None
HC	= Hexavalent chromium reduction tank	RT, dimensions

RT = residence time in hours

dimensions = provide depth and diameter (circular) or length and width (rectangular)

hp = horsepower

gpm = gallons per minute

cfm = cubic feet per minute

WASTEWATER TREATMENT UNIT CODES	
Code	Design Parameters of Interest
IP = Inclined plate separator	RT, dimensions, type (plate or tube)
IN = Incinerator or combustor	operating temperature
IE = Ion exchange system	resin life and type, wastewater application rate, dimensions
NE = Neutralization or pH adjustment tank	RT, dimensions
OS = Oil skimmer	RT
SA = Oil/water separator - American Petroleum Institute (API)	
SO = Oil/water separator - other (<i>specify type with design parameter</i>)	
RP = Retention pond (not used for biological treatment)	RT, dimensions
RO = Reverse osmosis system	membrane life, operating pressure, membrane dimensions and pore size
PS = Scale pit - with oil skimming	RT, dimensions
PN = Scale pit - without oil skimming	
BS = Sedimentation basin - with pipe/tube settlers	RT, dimensions
BN = Sedimentation basin - without pipe/tube settlers	
SC = Sludge dewatering unit - centrifuge	percent solids in feed and cake, gpm filtrate flow out, sludge mass generated on wet basis (lbs/day or tons/day)
SF = Sludge dewatering unit - filter press	
SG = Sludge dewatering unit - gravity thickener	
SB = Sludge dewatering unit - sludge bed	
SD = Sludge dewatering unit - sludge dryer	
SV = Sludge dewatering unit - vacuum drum filter	
SO = Sludge dewatering unit - other (<i>specify type with design parameter</i>)	
SP = Spray ponds	volume, surface area
TR = Tar removal unit (after tar decanter, but before ammonia still)	RT, dimensions
TB = Tar removal unit (after ammonia still but before biological treatment)	
OO = Other (<i>specify type with design parameter</i>)	RT, dimensions

RT = residence time in hours

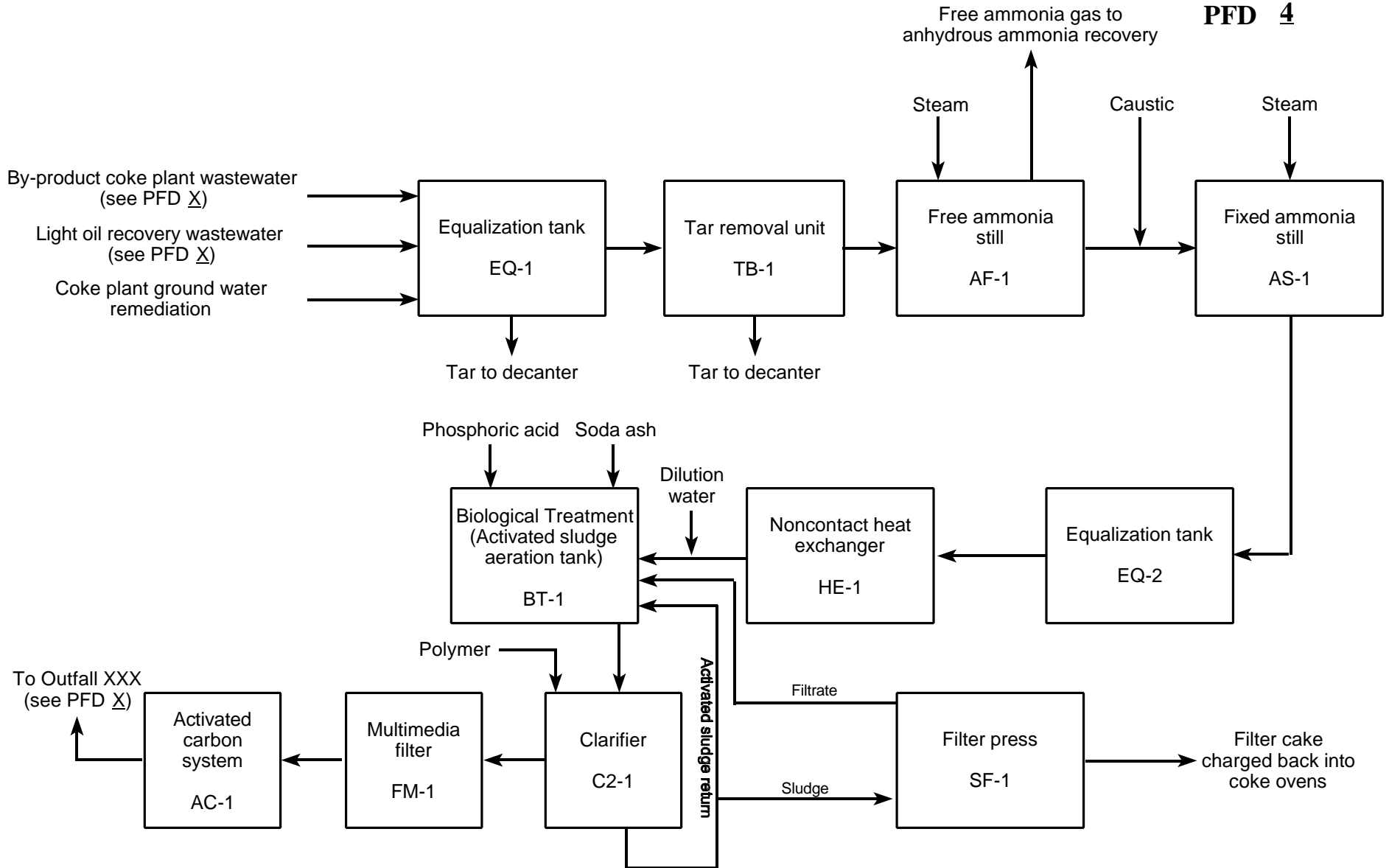
dimensions = provide depth and diameter (circular) or length and width (rectangular)

hp = horsepower

gpm = gallons per minute

cfm = cubic feet per minute

Site ID **XXXX**
PFD **4**



**Coke Plant Wastewater Treatment System
Example Process Flow Diagram**

G CBI 2A-20.

For all sources to this treatment system, complete the table on the following page with the following information:

- The sources of wastewater (e.g., manufacturing process wastewater, manufacturing process noncontact cooling water, utility wastewater, storm water, ground water, landfill leachate, or the effluent from another treatment system). For noncontact cooling water, storm water, and ground water sources, specify the associated manufacturing areas of the mill. Examples include, but are not limited to:
 - Manufacturing process wastewater: excess ammonia liquor, steam for ammonia still operation, caustic solution for ammonia still operation, benzol plant wastewater, final cooler wastewater, ammonium sulfate or other ammonia recovery wastewater, coke oven gas desulfurization wastewater, coke oven gas condensates, sinter plant scrubber water, blast furnace scrubber water.
 - Manufacturing process noncontact cooling water (NCCW): heat exchanger NCCW.
 - Storm water: coal storage area storm water, ore yard storm water, coke storage area storm water, slag pit area storm water.
 - Ground water: ground water pumped from site of active or dismantled coke battery or by-product recovery area.
 - Landfill leachate: landfill leachate from the on-site landfill for sludges generated by wastewater treatment systems.
 - Effluent from another treatment system: blast furnace recycle system blowdown.
 - Other: Wharf and quench track drainage.
- The estimated average flow rate in gallons per minute (gpm), hours per day (hpd), and days per year (dpy) **OR** if batch, the estimated average flow rate in gallons per day (gpd) and days per year (dpy). You are required to provide best engineering estimates when data are not readily available. If you provide an estimate, note the methods that were used to make the estimates on the comments page at the end of the section.
- The first treatment unit in this wastewater treatment system that the wastewater source enters. Use the unit codes that were assigned to the units on the process flow diagram (Question 2A-19) and used to provide information in Question 2A-21.

G CBI 2A-20.
(cont.)

For **ALL** sources to this treatment system provide the sources of wastewater, the actual or estimated average flow rate, and the receiving treatment unit code from Question 2A-19. **If you need additional space, photocopy this page before writing on it and number each copy of Question 2A-20 in the space provided in the upper right corner. Note: Question 2A-20 is one page long.**

Source of Wastewater	Average Flow Rate	Receiving Treatment Unit Code
Example Flushing liquor	<div> <div>60 gpm</div> <div>24 hpd</div> <div>365 dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	C1-1
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	
	<div> <div>_____ gpm</div> <div>_____ hpd</div> <div>_____ dpy</div> </div> <div>OR: _____ gpd _____ dpy</div>	

G CBI 2A-21.

For this system, use the wastewater treatment unit codes and design parameters provided in Question 2A-19. Under "Unit Code", list all wastewater treatment units in this coke plant that were part of the wastewater treatment system as it was configured to operate during **1997**. For each unit, indicate whether it is used on a batch or continuous basis, provide the unit's design capacity flow and design parameters, and provide the year of installation. To the extent available, provide additional design parameters not listed on the table in Question 2A-19. **If you need additional space, photocopy this page before writing on it and number each copy of Question 2A-21 in the space provided in the upper right corner. Note: Question 2A-21 is one page long.**

Unit Code	Batch or Continuous	Design Capacity Flow	Design Parameter(s)	Year Installed
Example C1-1	G Batch	_____ gal/batch _____ batch/day	circular, 80' diameter, 12' depth, 900 gal/ft ² -day, 2 hr retention time	1991
	Continuous	_____ 60 _____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		

- G CBI 2A-22.** Provide actual operating and maintenance (O&M) costs paid and rates for this system during **1997**. If actual costs and rates are not available, provide best estimates. Include operating labor, maintenance, sampling/monitoring costs, chemical costs, energy costs, steam costs, and sludge and oil disposal fees. Also include rates of labor, energy, steam, and sludge and oil disposal fees.

O&M Category	Cost	Rate
Labor (operating and maintenance)	\$	\$ per hour (average rate of labor)
Maintenance (materials and vendors)	\$	
Sampling/Monitoring Costs	\$	
Chemical Costs	\$	
Energy Costs - Power	\$	\$ per kwh
Energy Costs - Gas	\$	\$ per G mmcf G million btu
Energy Costs - Fuel Oil	\$	\$ per Ggallon Gbarrel
Energy costs - Other (<i>specify</i>):	\$	\$ per (<i>specify unit of measurement</i>):
Steam Costs	\$	\$ per pound
RCRA-Hazardous Sludge Disposal	\$	\$ per Ggallon Gton
Nonhazardous Sludge Disposal	\$	\$ per Ggallon Gton
Other Sludge Disposal, if other classifications apply to your area (<i>specify type</i>):	\$	\$ per Ggallon Gton
Oil Disposal	\$	\$ per Ggallon Gton
Other (<i>specify</i>):	\$	
Other (<i>specify</i>):	\$	
Other (<i>specify</i>):	\$	
Other (<i>specify</i>):	\$	

RCRA = Resource Conservation and Recovery Act
kwh = kilowatt hour
barrel = 42 gallons

mmcf = million cubic feet
btu = British thermal unit

G CBI 2A-23.a. Is this treatment system a biological treatment system used to treat coke plant wastewater?

G Yes (continue)

G No (SKIP to Question 2A-24)

G CBI b. Are waters other than coke plant wastewaters added for optimization of biological treatment system performance (commonly referred to as dilution water)?

G Yes

Indicate reason(s), check (✓) **ALL** that apply.

G Temperature control

G Toxicity reduction

G Other (specify): _____

G No

G CBI c. Provide information on any non-coke plant water added to the biological treatment system. Indicate whether the following sources are used for optimization of the system and the associated flow rates.

Water Source	Used to Optimize Treatment System?	Flow Rate
Plant service water (city, well, or surface water which has not been used elsewhere on the site)	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Noncontact cooling water (specify manufacturing process(es)):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Treated coke plant wastewater	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Treated wastewater from other source (specify):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Untreated wastewater from another source (specify):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Treated storm water (specify manufacturing process(es) or other collection area(s)):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Untreated storm water (specify manufacturing process(es) or other collection area(s)):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy
Other (specify):	G Yes G No	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy

- G CBI 2A-23.d. (cont.)** Indicate which parameters are routinely monitored in the influent to the biological treatment system and provide the frequency of monitoring (e.g., continuously, daily, weekly). Check (✓) **ALL** that apply. If dilution water is added to the biological treatment system, indicate whether the parameters are monitored without (w/o) or before dilution water addition, after dilution water addition, or both. For each parameter routinely monitored, provide the range in which each parameter has been monitored in **1997** and include the units of measurement.

Routinely Monitored Parameter	Indicate if Monitored in Influent	Typical Range (specify units)	Annual Average (specify units)
G Temperature Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G 5-day biochemical oxygen demand (BOD ₅) Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Chemical oxygen demand Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G pH Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Ammonia-N Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Phenols (4AAP) Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Thiocyanate Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Total dissolved solids (TDS) Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Total suspended solids (TSS) Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Total Kjeldahl nitrogen (TKN) Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Total cyanide Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Cyanides, amenable to chlorination Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Alkalinity Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Other (specify): Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		
G Other (specify): Frequency:	G Monitored w/o or before dilution		
	G Monitored after dilution		

G CBI 2A-23.e.
(cont.)

Indicate which parameters are routinely monitored in the aeration basins to operate and control the biological treatment system. Check (✓) ALL that apply. For each parameter which is routinely monitored, provide the frequency of monitoring (e.g., continuously, daily, weekly) and the target range of controls for optimal operation of the system. Also, include the units of measurements.

Monitored Parameter		Frequency of Monitoring	Range of Controls (specify units)
G	Mixed liquor suspended solids (MLSS)		
G	Mixed liquor volatile suspended solids (MLVSS)		
G	Food to microorganism ratio (F/M)		
G	Dissolved oxygen		
G	Oxygen uptake rate		
G	Alkalinity		
G	Sludge age		
G	Temperature		
G	Ammonia-N		
G	Phenols (4AAP)		
G	Thiocyanate		
G	Total dissolved solids (TDS)		
G	Microorganism populations		
G	Microorganism diversity		
G	pH		
G	Other (specify):		
G	Other (specify):		
G	Other (specify):		
G	Other (specify):		
G	Other (specify):		
G	Other (specify):		

- G CBI 2A-24.** Provide information on any recent modifications and/or shut downs which have occurred at this wastewater treatment system since 1993. Recent modifications may include the replacement, upgrade, or addition of one or more treatment units. Explain why treatment units have been replaced, upgraded, added, or shut down (e.g., compliance with water quality limits).

Shut Down or Modification?	Date	Description

- G CBI 2A-25.** Provide information on any publicly announced modifications and/or shut downs planned to occur during the next five years (1998 to 2002) at this wastewater treatment system. Explain why treatment units will be replaced, upgraded, added, or shut down (e.g., compliance with water quality limits).

Shut Down or Modification?	Anticipated Date	Description

G CBI 2A-26.

Identify **ALL** chemical and nutrient additions to this treatment system, completing one row for each chemical or nutrient. Provide the chemical name (including vendor name and product code, if applicable), the purpose of the chemical, the consumption rate of the undiluted chemical, and the receiving treatment unit code from Question 2A-19. **If you need additional space, photocopy this page before writing on it and number each copy of Question 2A-26 in the space provided in the upper right corner. Note: Question 2A-26 is one page long.**

Chemicals & Nutrients	Purpose	Consumption Rate	Receiving Treatment Unit Code(s)
<u>Example</u> Polymer (XYZ Company; product AB40)	improve settling	_____ gal/day 50 _____ lbs/day	C1-1 C1-2
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	
		_____ gal/day _____ lbs/day	

G CBI 2A-27.

Identify **ALL** discharges from this treatment system, **including treated wastewater, sludge, and oil discharges** and provide the treatment unit code (from Question 2A-19) for the unit which releases this discharge. Provide actual or estimated flow rates for each discharge in gallons per minute (gpm), hours per day (hpd), days per year (dpy), pounds per day (lbs/day), or tons per day (tons/day). Provide the destination of each discharge (e.g., effluent discharged to river, effluent used as quench water, effluent injected into a deep well, dewatered sludge landfilled on site in a nonhazardous landfill, waste oil hauled off site for reclamation). **If you need additional space, photocopy this page before writing on it and number each copy of Question 2A-27 in the space provided in the upper right corner. Note: Question 2A-27 is one page long.**

Discharge and Treatment Unit Code	Flow or Discharge Rate	Destination
Example Final Effluent CT-1	60 gpm 24 hpd 365 dpy OR: _____ gpd _____ dpy	Mill Creek via Outfall 002
Wastewater		
	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy	
	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy	
	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy	
	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy	
	_____ gpm _____ hpd _____ dpy OR: _____ gpd _____ dpy	
Oil Wastes		
	_____ gpd _____ dpy _____ % moisture	
	_____ gpd _____ dpy _____ % moisture	
Solid Waste - Wet Weight		
	_____ lbs/day or _____ tons/day _____ dpy _____ % solids	
	_____ lbs/day or _____ tons/day _____ dpy _____ % solids	

Question 2A-28 requires summary information for data collected by your site, including (1) any data collected simultaneously at both influent and effluent streams from a wastewater treatment system or a treatment unit, and (2) any other wastewater characterization data collected at nonpermitted monitoring locations.

This question requires you to assign a unique sampling point (SP) number to each sampling location, identify the location on the appropriate PFD with this SP number, and provide the SP number and the PFD number at the top of the table. At the top of the table, provide (1) the treatment unit codes (from Question 2A-19) from where the wastewater stream is an effluent (e.g., acid pickling line and recycle system) and to where the stream is an influent (e.g., C1-1), **OR** (2) the outfall to where the wastewater stream is discharged (e.g., Outfall 001 - Mill Creek). Check (✓) the appropriate choice and provide the source and/or destination of the stream.

This question contains a table to specify the following information:

- The pollutant analyzed (using the provided codes shown on the following page);
- The EPA analytical method used;
- Whether the samples were collected as grabs or as composites;
- The total number of samples collected at that sampling point for that pollutant;
- The number of samples in which the pollutant was not detected;
- The typical detection limit or range of detection limits for that sampling point for that pollutant;
- The average concentration of the pollutant;
- The calculation methodology used to determine the average concentration when some or all measurements were not detected (see the following detailed description);
- The maximum concentration of the pollutant;
- The minimum concentration of the pollutant; and
- The average flow rate at this sampling point during the sampling period for that pollutant.

At the top of the table, you are also required to provide the range of dates in which data were collected. Complete the table, one page per sampling point, one row per pollutant parameter.

Pollutant Parameter Codes

Pollutant Parameter Code	Pollutant Parameter Name	Pollutant Parameter Code	Pollutant Parameter Name
P-1	Aluminum, Total	P-20	Phenols (4AAP)
P-2	Ammonia - N	P-21	Temperature
P-3	Benzene	P-22	Tetrachloroethylene
P-4	Benzo(a)pyrene	P-23	Tin, Total
P-5	Biochemical Oxygen Demand (BOD)	P-24	Total Dissolved Solids (TDS)
P-6	Chemical Oxygen Demand (COD)	P-25	Total Petroleum Hydrocarbons (TPH), SGT-HEM ²
P-7	Chromium, Total	P-26	Total Recoverable Petroleum Hydrocarbons
P-8	Copper, Total	P-27	Total Residual Chlorine
P-9	Cyanide, Amenable	P-28	Total Suspended Solids (TSS)
P-10	Cyanide, Total	P-29	Zinc, Total
P-11	Hexavalent Chromium	P-30	Other (<i>specify</i>): _____
P-12	Iron, Total	P-31	Other (<i>specify</i>): _____
P-13	Lead, Total	P-32	Other (<i>specify</i>): _____
P-14	Mercury, Total	P-33	Other (<i>specify</i>): _____
P-15	Naphthalene	P-34	Other (<i>specify</i>): _____
P-16	Nickel, Total	P-35	Other (<i>specify</i>): _____
P-17	Oil and Grease, HEM ¹	P-36	Other (<i>specify</i>): _____
P-18	Oil and Grease, Total Recoverable	P-37	Other (<i>specify</i>): _____
P-19	pH	P-38	Other (<i>specify</i>): _____

¹N-Hexane Extractable Material (HEM)

²Silica Gel Treated N-Hexane Extractable Material (SGT-HEM)

Not Detected (ND) Calculation Method

To complete Question 2A-28, you are required to provide the calculation method you used to calculate the average concentration of each pollutant parameter when some or all measurements were not detected (ND). Since laboratories may report pollutant parameters as ND, EPA expects that you will also use the NDs in the calculation of the average concentration. There are several methods which may be used to calculate an average pollutant parameter concentration when ND values have been reported by the laboratory. EPA requires you to identify which method you used to calculate an average pollutant parameter concentration. The following is a description of the different types of detection limits, the ND calculation methods, and examples:

- The method detection limit is the detection limit set by the analytical methods in 40 CFR Part 136.
- The sample detection limit is the detection limit set by the matrix complexity and reported to you by the laboratory.

In calculating an average pollutant concentration, the following methods of including ND sample results are typically used:

- ND value set equal to the method detection limit;
- ND value set equal to one-half of the method detection limit;
- ND value set equal to the sample detection limit;
- ND value set equal to one-half of the sample detection limit; and
- ND value set equal to zero (0).

EXAMPLE: Suppose a site analyzes two samples for benzo(a)pyrene. Benzo(a)pyrene is detected in the first sample at 100 ppb, but is not detected in the second sample. The analytical laboratory reports the second result as <50 ppb, where the method detection limit is 10 ppb, and the sample detection limit is 50 ppb. Depending on which calculation method is used, the following averages could be calculated.

Result 1	Result 2	Method	Average
100 ppb	ND(50 ppb)	Used method detection limit (10 ppb)	55 ppb
100 ppb	ND(50 ppb)	Used one-half method detection limit (5 ppb)	52.5 ppb
100 ppb	ND(50 ppb)	Used sample detection limit (50 ppb)	75 ppb
100 ppb	ND(50 ppb)	Used one-half sample detection limit (25 ppb)	62.5 ppb
100 ppb	ND(50 ppb)	Used zero (0)	50 ppb

Use the following list of ND Calculation Method Codes to complete Question 2A-28.

ND Calculation Method Code	ND Calculation Method
ND-1	Used method detection limit
ND-2	Used one-half of the method detection limit
ND-3	Used sample detection limit
ND-4	Used one-half of the sample detection limit
ND-5	Used zero (0)
ND-6	Other (<i>specify</i>):

Submittal of Hard Copy and Electronic Data

If you have any of the data requested in Question 2A-28 readily available in the requested format (see the question), you may attach it to the survey in lieu of responding to the question; write your site ID (shown on the cover page of Part A) and the question number on the upper right corner of each attachment. If you have any of the data requested in Question 2A-28 readily available in an electronic format (e.g., spreadsheet), please include a disk with the hard copy output of the electronic file with your survey submittal. Indicate below whether you are submitting hard copies of the data requested in Question 2A-28.d. in lieu of filling out this part of the question. Also indicate whether you are including data in an electronic format in addition to the hard copies; specify the software and version.

Question	Hard Copy	Electronic
2A-28.d.	G	G

Software and version: _____

- G CBI 2A-28.a.** Has your site collected any data for any parameter from **NONPERMITTED MONITORING LOCATIONS** in this system by EPA-approved methods as described in 40 CFR Part 136 **during 1997?** **DO NOT INCLUDE DATA COLLECTED FOR THE PURPOSE OF PERMIT COMPLIANCE;** NPDES permit compliance data are requested in Section 4.
G Yes (continue)
G No (SKIP to Question 2A-29)
- G CBI b.** Indicate the type of data collected from nonpermitted monitoring locations in this system. Check (✓) **ALL** that apply.
G Data collected simultaneously at both influent and effluent streams from this system or any unit in this system.
G Wastewater characterization analytical data collected from separate nonpermitted monitoring location(s).
- G CBI c.** Has your site collected any data for any parameter from nonpermitted monitoring locations in this system by EPA-approved methods as described in 40 CFR Part 136 **during 1995 or 1996?**
G Yes
G No

G CBI 2A-28.d. Provide summary information for any parameter collected simultaneously at both influent and effluent streams from this system or any unit in this system **OR** for any wastewater characterization analytical data collected at nonpermitted monitoring locations at this system by EPA-approved methods as described in 40 CFR Part 136 during 1997. Complete a copy of Question 2A-28.d. for each separate location where data were collected. Number each copy in the space provided in the upper right corner.

[illegible]

G CBI 2A-29.

List ALL metal, organic, dioxin/furan, PCB, and conventional (e.g., total suspended solids (TSS) oil and grease) pollutant parameters which this system is designed to treat. If you need additional space, photocopy this page before writing on it and number each copy of Question 2A-29 in the space provided in the upper right corner. Note: Question 2A-29 is one page long.

[illegible]

G CBI 2A-30.a. Indicate whether there are any available parcels of on-site land appropriate for the construction of additional wastewater treatment facilities.

G Yes (continue)

G No (SKIP to Question 2A-31)

G CBI b. For up to five parcels of land on site, provide a general description of the location of each parcel with respect to a manufacturing process or a wastewater treatment system, the size of each parcel, and the distance each parcel is from this wastewater treatment system.

Parcel of Land	General Description of the Location	Size of Parcel (acres)	Distance from this system (specify units)
1			
2			
3			
4			
5			

G CBI 2A-31.

For this system, list any operable wastewater treatment units which were located at this wastewater treatment system but were **NOT** part of the system as it was configured to operate during **1997**. For each unit, indicate whether it is used on a batch or continuous basis, provide the unit's design capacity flow and design parameters, and provide the year of installation. To the extent available, provide additional design parameters not listed on the table in Question 2A-19. **If you need additional space, photocopy this page before writing on it and number each copy of Question 2A-31 in the space provided in the upper right corner. Note: Question 2A-31 is one page long.**

Unit Code	Batch or Continuous	Design Capacity Flow	Design Parameter(s)	Year Installed
Example C1-1	G Batch	_____ gal/batch _____ batch/day	circular, 80' diameter, 12' depth, 900 gal/ft ² -day, 2 hr retention time	1991
	Continuous	_____ 60 _____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		
	G Batch	_____ gal/batch _____ batch/day		
	G Continuous	_____ gpm		

G CBI 2A-32.a. Are any operational practices designed to minimize the quantity of cyanides in the coke oven gas?

G Yes (continue)

G No (SKIP to Question 2A-33)

G CBI b. Indicate the practice performed and provide a brief description. Attach a description if necessary and write your site ID (shown on the cover of part A) and this question number on the upper right corner of the attachment.

G CBI 2A-33.a. Are any operational practices designed to minimize the quantity of cyanides in any process wastewater stream?

G Yes (continue)

G No (SKIP to Section 2B)

G CBI b. Indicate the practice performed.

G Cyanide stripping

G Other (*provide a brief description*)

COMMENTS FOR SECTION 2A: COKEMAKING

Cross reference your comments by question number and indicate the confidential status of your comment by checking (✓) the box in the column titled "CBI" (Confidential Business Information). If you need additional space, photocopy this page before writing on it and number each copy in the space provided in the upper right corner.

Question Number	CBI	Comment
	G	
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	G	

SECTION 2B. SINTERING

TECHNICAL INFORMATION HELP LINE: (800) 357-7075



IS SINTERING PERFORMED AT THIS SITE?

G YES (CONTINUE)

G NO (SKIP TO SECTION 2C)

THROUGHOUT THIS SECTION, YOU WILL BE REQUIRED TO PROVIDE INFORMATION FOR **ALL** OPERABLE UNITS AND WATER SYSTEMS RELATED TO SINTERING WHICH WERE ON SITE DURING 1997, INCLUDING UNITS AND WATER SYSTEMS WHICH MAY HAVE BEEN IDLE FOR AN EXTENDED PERIOD OF TIME DUE TO CIRCUMSTANCES SUCH AS MARKET CONDITIONS, MAJOR REBUILDS, OR LABOR DISPUTES. IF AN OPERABLE UNIT OR WATER SYSTEM WAS NOT IN OPERATION DURING 1997, SUBSTITUTE THE MOST RECENT CALENDAR YEAR WHEN SUCH CIRCUMSTANCES DID NOT EXIST. NOTE THE YEAR OF OPERATION AND THE CIRCUMSTANCES IN THE COMMENTS AT THE END OF THIS SECTION, AND PROVIDE DATA FROM THAT CALENDAR YEAR.

G CBI 2B-1.a. What is the total rated capacity of the sinter plant in tons per year of sintered product?

_____ million tons/year (to three significant figures, e.g., 2.25 million tons/year)

G CBI b. What is the annual number of operating hours used to determine the total rated capacity?

_____ hours/year

G CBI 2B-2. What was the first year of operation at the sinter plant? _____

G CBI 2B-3.a. How many sinter strands are in this sinter plant? _____

G CBI b. How many operable sinter strands were on site during 1997? _____

G CBI 2B-4. Provide annual production data for sintering for each of the five calendar years 1993 through 1997.

Year	Sinter Produced (tons/year)
1993	
1994	
1995	
1996	
1997	

G CBI 2B-5. What is the typical percent (%) moisture by weight of the sinter mix as applied to the sinter strand?

_____ typical % by weight

G CBI 2B-6. How much water, on average, is added to the sinter mix to attain the desired moisture content? If no water is added, check (✓) the box to the right and SKIP to Question 2B-8. **G**

_____ gpm _____ hours per day _____ days per year

G CBI 2B-7.

Indicate **ALL** sources of water used to condition the sinter mix. Provide the estimated percentage of water contributed by each source. The percentages should add to 100 percent.

- G** Plant service water (city, well, or surface water which has not been used elsewhere on site) _____ %
- G** Noncontact cooling water (*specify manufacturing process(es)*): _____ %

- G** Treated sinter plant wastewater _____ %
- G** Other treated process wastewater (*specify manufacturing process(es)*): _____ %
- G** Untreated process wastewater (*specify manufacturing process(es)*): _____ %

- G** Treated storm water (*specify manufacturing process(es) or other collection area(s)*): _____ %

- G** Untreated storm water (*specify manufacturing process(es) or other collection area(s)*): _____ %

- G** Other (*specify*): _____ %
- Total: 100% %

G CBI 2B-8.

Check (✓) **ALL** raw materials which were charged to the sintering process during **1997**.

- G** Flue dusts from ironmaking
- G** Flue dusts from steelmaking
- G** Iron ores
- G** Iron ore fines
- G** Coal
- G** Coke
- G** Coke breeze
- G** Any iron-bearing material from off-site sources (*specify*): _____

- G** Mill scale (*specify mills*): _____
- G** Limestone
- G** Sludges from the blast furnace wastewater treatment system
- G** Sludges from the basic oxygen furnace wastewater treatment system
- G** Other wastewater treatment sludges (*specify treatment system*): _____

- G** Other (*specify*): _____
- G** Other (*specify*): _____



HOW MANY **OPERABLE WET AIR POLLUTION CONTROL (WAPC) SYSTEMS** WERE ON SITE AT THIS SINTER PLANT DURING **1997**? A WAPC SYSTEM MAY INCLUDE MULTIPLE DEVICES SERVING THE SAME PROCESSING UNIT. _____

COMPLETE A COPY OF QUESTION 2B-9 FOR **EACH** OPERABLE WAPC SYSTEM. NUMBER EACH COPY OF QUESTION 2B-9 IN THE SPACE PROVIDED IN THE UPPER RIGHT CORNER. NOTE: QUESTION 2B-9 IS THREE PAGES LONG.

IF YOUR SITE DOES NOT HAVE WET AIR POLLUTION CONTROL ASSOCIATED WITH THIS SINTER PLANT, **CHECK THE BOX TO THE RIGHT AND SKIP TO QUESTION 2B-10.** **G**

G CBI 2B-9.a. Provide the designation(s) of all operations associated with this WAPC system. If information for this WAPC system is already provided elsewhere in this survey, answer Question 2B-9.a., check the box to the right, and SKIP to Question 2B-10. **G**

G CBI b. This WAPC system controls emissions from which of the following processes? Check (✓) **ALL** that apply.

- G** Raw material handling, preparation, and storage
- G** Sinter strand entry end
- G** Sintering machine, windbox
- G** Sintering machine, other than windbox (*specify*): _____
- G** Sinter cooling
- G** Crushing and screening of sinter product
- G** Building evacuation
- G** Other (*specify*): _____

G CBI c. Indicate the devices in this WAPC system. Check (✓) **ALL** that apply.

G Venturi scrubber	G Demister
G Spray chamber	G Packed tower
G Evaporator chamber	G Other (<i>specify</i>): _____
G Separator	G Other (<i>specify</i>): _____

G CBI d. Provide the gas or air flow through the system in dry standard cubic feet per minute (dscfm).
_____ dscfm

G CBI e. Is the water recirculated or applied once-through?

- G** Recirculated (continue)
- G** Once-through (SKIP to Question 2B-9.i.)

G CBI f. Is any treatment and/or conditioning (e.g., chemical additions) performed in the recirculating loop?

- G** Yes (continue)
- G** No (SKIP to Question 2B-9.j.)

G CBI g. Does the treatment in the recirculating loop also treat wastewater from other processes?

- G** No - Dedicated treatment
- G** Yes - Treatment shared with other processes

Specify the processes: _____

COMPLETE A COPY OF QUESTION 2B-9 FOR EACH OPERABLE WAPC SYSTEM.

- G CBI 2B-9.h. (cont.)** Check (✓) **ALL** treatment units and/or treatment processes which are included in the recirculating loop.
- | | |
|---|---|
| G Clarifiers | G Oil skimmers |
| G Classifiers | G Scale pits |
| G Cooling towers | G Sludge dewatering units (e.g., vacuum filter, pressure filtration, etc.) |
| G Earthen Lagoons | G Water filters (e.g., sand, multimedia, etc.) |
| G Lined (<i>specify liner type</i>): | G Water softeners |
| G Clay | G Other (<i>specify</i>): _____ |
| G Synthetic | G Other (<i>specify</i>): _____ |
| G Other (<i>specify</i>): _____ | G None |
| G Unlined | |
- G CBI i.** Indicate chemical additions to the water recirculation system. Check (✓) **ALL** that apply.
- | | |
|-------------------------------------|--|
| G Acid | G Scale inhibitor |
| G Caustic (sodium hydroxide) | G Surfactant |
| G Corrosion inhibitor | G Other (<i>specify</i>): _____ |
| G Lime | G Other (<i>specify</i>): _____ |
| G Polymer | G None |
- G CBI j.** Provide the design flow of water through the recirculating loop. _____ gpm
- G CBI k.** Provide the average recirculation rate of water through the WAPC system and period of operation.
- _____ gpm _____ hours per day _____ days per year
- G CBI l.** Provide the average rate at which new water is added to the system (for once-through systems, provide the influent flow rate; for recirculating systems, provide the makeup flow rate).
- _____ gallons per day _____ days per year
- G CBI m.** Indicate **ALL** sources for water addition. Provide the percentage of water contributed by each source. The percentages should add to 100 percent.
- | | |
|--|---------|
| G Plant service water (city, well, or surface water which has not been used elsewhere on site) | _____ % |
| G Noncontact cooling water (<i>specify manufacturing process(es)</i>): _____ | _____ % |
| G Treated process wastewater (<i>specify manufacturing process(es)</i>): _____ | _____ % |
| G Untreated process wastewater (<i>specify manufacturing process(es)</i>): _____ | _____ % |
| G Treated storm water (<i>specify manufacturing process(es) or other collection area(s)</i>): _____ | _____ % |
| G Untreated storm water (<i>specify manufacturing process(es) or other collection area(s)</i>): _____ | _____ % |
| G Other (<i>specify</i>): _____ | _____ % |
| Total: _____ 100 _____ % | |

COMPLETE A COPY OF QUESTION 2B-9 FOR EACH OPERABLE WAPC SYSTEM.

G CBI 2B-9.n. (cont.) Provide the average discharge rate from the system and period of discharge (for recirculating systems, provide the blowdown rate).

_____ gpm _____ hours per day _____ days per year

OR: _____ gallons per day _____ days per year

G CBI o. Indicate the destination of wastewater discharge or blowdown. Check (✓) **ALL** that apply.

G Discharge to treatment (*specify treatment system*): _____

G Discharge without treatment by pipeline, sewer, or other conveyance to surface water (*specify outfall number*): _____

G Discharge without treatment by pipeline, sewer, or other conveyance to POTW (*specify designation for permit monitoring location*): _____

G Discharge without treatment by pipeline, sewer, or other conveyance to PrOTW (*specify designation for permit monitoring location if applicable*): _____

G Zero discharge or alternative disposal methods:

G Deep-well injection

G Evaporation (*specify method*): _____

G Percolation pond

G Spray irrigation

G Contract hauled

(*specify disposal rate, including transportation*): \$ _____ per gallon

(*specify destination/disposal method*): _____

G Incineration

G Other (*specify*): _____

G CBI 2B-10.a. Are any dry air pollution control (DAPC) systems associated with this sinter plant?

G Yes (continue)

G No (SKIP to Question 2B-11)

G CBI b. Indicate the process(es) associated with DAPC systems in the sinter plant. Check (✓) **ALL** that apply. For each process checked, indicate the type of DAPC system.

Process	Type of DAPC System
G Raw material handling, preparation, and storage associated with the sinter plant	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Sinter strand entry end	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Sintering machine, windbox	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Sintering machine, other than windbox (specify):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Sinter cooling	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Crushing and screening of sinter product	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Building evacuation associated with the sinter plant	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Other (specify):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Other (specify):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):
G Other (specify):	G Fabric filter (i.e., baghouse) G Electrostatic precipitator G Other (specify):



EXCLUDING WAPC SYSTEMS AND STORM WATER, HOW MANY OTHER WASTEWATER SOURCES FROM SINTER PLANT OPERATIONS ARE PRESENT? _____

COMPLETE A COPY OF QUESTION 2B-11 FOR **EACH** SINTER PLANT WASTEWATER SOURCE. NUMBER EACH COPY OF QUESTION 2B-11 IN THE SPACE PROVIDED IN THE UPPER RIGHT CORNER. NOTE: QUESTION 2B-11 IS TWO PAGES LONG.

IF YOUR SITE HAS NO SINTER PLANT SOURCES WHICH CONTRIBUTE PROCESS WASTEWATER NOT ASSOCIATED WITH A WAPC SYSTEM OR STORM WATER, **CHECK THE BOX TO THE RIGHT AND SKIP TO QUESTION 2B-12.**

G

2B-11. Provide information for the sinter plant and related on-site wastewater generating sources.

G CBI a. Indicate the source of process wastewater **NOT** associated with wet air pollution control or storm water. If there is more than one source at this site, complete a copy of this question for **EACH** sinter plant source.

G Raw material handling, preparation, and storage

G Sinter cooling

G Equipment cleaning and washdown water

G Other (specify): _____

G CBI b. Provide a list of chemicals or pollutants known or believed to be present in this source of process wastewater. If a list is readily available, attach it to the survey with this question number and your site ID written on the upper right corner. If a chemical or pollutant originates from a commercial cleaning solution (e.g., solutions used to clean and wash equipment), provide the vendor name of the cleaning product and the product code, if known.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

G CBI c. Provide the wastewater flow rate and period of discharge associated with the source checked above.

_____ gpm _____ hours per day _____ days per year

OR: _____ gallons per day _____ days per year

COMPLETE A COPY OF QUESTION 2B-11 FOR EACH SINTER PLANT SOURCE GENERATING PROCESS WASTEWATER
NOT ASSOCIATED WITH A WAPC SYSTEM OR STORM WATER.

- G CBI 2B-11.d. Indicate the destination of this wastewater stream. Check (✓) **ALL** that apply.
(cont.)
- G Discharge to treatment (*specify treatment system*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to surface water (*specify outfall number*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to POTW (*specify designation for permit monitoring location*): _____
 - G Discharge without treatment by pipeline, sewer, or other conveyance to PrOTW (*specify designation for permit monitoring location if applicable*): _____
 - G Zero discharge or alternative disposal methods:
 - G Deep-well injection
 - G Evaporation (*specify method*): _____
 - G Percolation pond
 - G Spray irrigation
 - G Contract hauled
(*specify disposal rate, including transportation*): \$ _____ per gallon
(*specify destination/disposal method*): _____
 - G Incineration
 - G Other (*specify*): _____

G CBI 2B-12. Provide information on any major process modifications and/or shut downs which have occurred at the sinter plant since 1993.

Shut Down or Modification?	Date	Description

G CBI 2B-13. Provide information on any publicly announced process modifications and/or shut downs planned to occur during the next five years (1998 to 2002) at the sinter plant.

Shut Down or Modification?	Anticipated Date	Description

G CBI 2B-14. Indicate **ALL** pollution prevention (waste reduction) or management practices implemented by your site for the sinter plant and describe the practice as it is implemented. Describe all processes where by-products and wastes are recovered for reuse or sold as a raw material feedstock. Discuss the percent recovered.

Management Practices	Description of Practice
G Management of spillage and losses from raw material handling operations associated with the sinter plant	
G Management of runoff from raw material or product storage piles associated with the sinter plant	
G Management of fugitive discharges of process wastewaters and materials to any sinter plant noncontact cooling water (NCCW) system	
G Surveillance and corrective action programs for oil discharges from large NCCW flows associated with the sinter plant	
G Collection and treatment and/or disposal of storm water from any areas associated with the sinter plant (specify manufacturing processes or other collection areas in the description)	
G Collection and treatment and/or disposal of landfill leachate from any landfills associated with sinter plant wastes	
G Collection and treatment and/or disposal of contaminated ground waters associated with the sinter plant	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	
G Other (<i>specify</i>):	

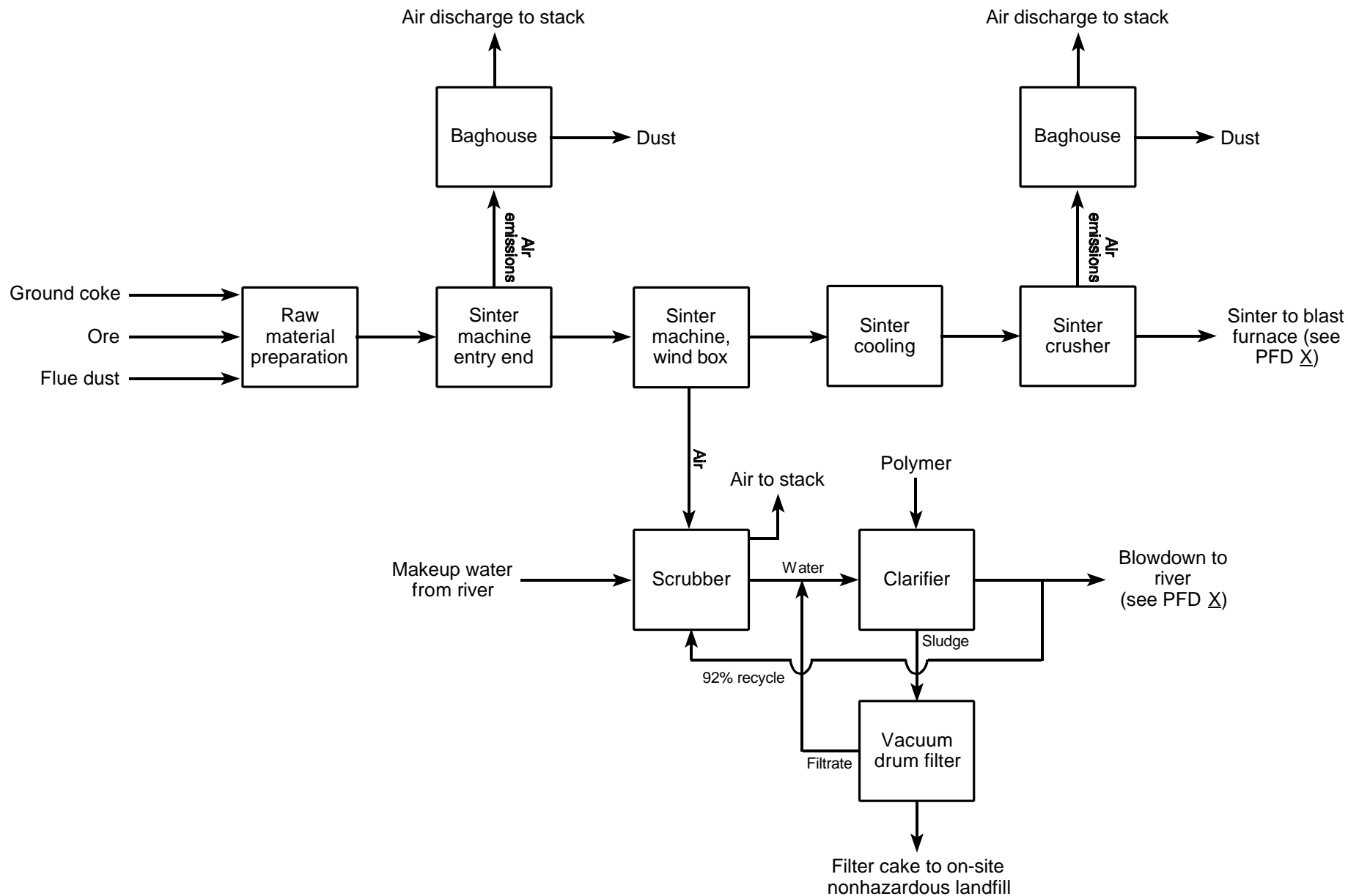
G CBI 2B-15. Attach a process flow diagram (PFD) that shows the sintering process and the water use associated with the process. You are **NOT** required to create a new PFD if an existing diagram will suffice. Number the diagram in the upper right corner, and include your site ID number (as shown on the cover page of Part A). Specific instructions for including the PFD, along with an example diagram, are provided below. **Flow rates are NOT required on the diagrams.**

Provide the PFD number assigned to the sintering plant PFD. **If the process is already shown on a PFD provided elsewhere in this survey, provide the PFD number and review the following list for completeness.** If you need assistance, call the Technical Information Help Line at (800) 357-7075.

Sinter plant PFD-_____

Process Flow Diagram Checklist

Be sure...	✓
All sintering operations are included. Include those operations which do not generate process wastewater.	G
All air pollution control systems are included. Label each system as being either wet or dry. Water streams for all wet air pollution control systems must be shown, including all recycle streams and all treatment processes within recycle loops.	G
Any recycle or reuse of process wastewater or other waters is indicated clearly on the diagram.	G
Any in-process wastewater treatment or reuse technologies are indicated. Show and label all treatment units and all recycle loops.	G
Significant losses of water (e.g., evaporation) are shown.	G
All materials entering each operation and all products and wastes exiting each operation are identified. Wastes include wastewater, sludges, baghouse dust, and point-source air emissions. Noncontact cooling water systems which do not contain process wastewater and do not discharge to process wastewater systems do not need to be included.	G
All process wastewater streams are identified. When sources and destinations of process wastewater are not shown on the diagram (i.e., the stream is entering from or exiting to a location not shown on the diagram), describe the source or destination (e.g., "from river" or "to wastewater treatment") and add the PFD number, when appropriate, where the stream's previous or next location can be seen.	G
The PFD number and your site ID number are written on the diagram.	G
If you believe that the diagram should be treated as confidential, stamp it "Confidential" or write "Confidential" or "CBI" across the top. If any diagram is not marked "Confidential", it will be considered nonconfidential under 40 CFR Part 2, Subpart B.	G



**Sintering
Example Process Flow Diagram**

COMMENTS FOR SECTION 2B: SINTERING

Cross reference your comments by question number and indicate the confidential status of your comment by checking (✓) the box in the column titled "CBI" (Confidential Business Information). If you need additional space, photocopy this page before writing on it and number each copy in the space provided in the upper right corner.

Question Number	CBI	Comment
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